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W.K.F.

COOPER ORNITHOLOGICAL CLUB

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVII

January-February, 1915

Number 1

WITH *RALLUS* IN THE TEXAS MARSH

By GEORGE FINLAY SIMMONS

WITH FOUR PHOTOS BY THE AUTHOR

NOTHING had been mine all spring but ill-luck! The season had been an unusually rainy one, even for the Gulf coastal region of southeastern Texas (which is by way of saying that there had been *some* rain). The prairies and prairie marshes were flooded, much to my sorrow, for I knew full well that no Louisiana Clapper Rail would be so indiscreet as to nest under such conditions.

But I was especially anxious to locate a nest of the bird, in order to make a further study of its nesting habits and home life (*Cf. Auk*, July, 1914, pp. 363-384), for but recently had I added the bird to my local list, and what I did *not* know about it would fill many volumes. It is said that the things people don't know will never hurt them, but that subject had rested heavily on my mind for some time.

For hours and hours, on numerous trips, I had tramped the flooded marshes, thinking evil thoughts of both the weather and the rails, and inwardly cursing my luck. I had searched every suitable clump of rushes and tussock of grass for miles around, but had found only one nest, April 21, 1914. To cap the climax of my seeming ill-luck, that nest was destroyed by still heavier rains before a single egg was laid!

Time and again, during May, I visited the localities frequented by *Rallus*, but found nothing until the 30th. The whole day was spent among the group of small ponds and marshes on the extensive coastal prairie south of Houston, and in the same marsh where the nest of April 21 was located I found a nest which the young had already deserted. It was among the tall weeds and rushes growing in water a foot deep, and contained one lone egg (1.62x1.18)

which held a dead chick. The nest was a slightly concave platform composed of coarse, buffy rushes and grasses, and was approximately four inches thick and nine and a half inches across. It was rather loosely attached to the reeds and rushes five inches above the water.

To me the nest was of especial interest, from the fact that it was in a small marsh of less than an acre in size, and not over a hundred yards north of a ranch house, the occupants of which were wont to pass within fifty feet of the nest several times a day. Generally the birds select a marsh far distant from any one of the few houses on that uncultivated prairie.

June 6 found me in the same region, about six miles south of Houston, searching the marshes and ponds for nests of the Least Bittern and Purple Gallinule. On the 30th I had been quite successful, for had I not located a nest of each containing five eggs? In the enthusiasm of the new discoveries I laid



Fig. 1. AT THE NEST OF THE LOUISIANA CLAPPER RAIL IN A MARSH NEAR HOUSTON, TEXAS. THE FEW SCRUBBY PERSIMMON TREES IN THE BACKGROUND FORM THE ONLY SHELTER FOR MILES.

aside my season's incubus—the search for a nest of friend *Rallus*—and took to the marshes in an effort to locate further nests of those two birds.

Merely as a matter of form, for that was one of my two regular routes when out abirding, I stopped at a favorite colony of the Florida Red-wing (*Agelaius phoeniceus phoeniceus*) by the side of the road six miles from the city, and made a circuit of the two-acre marsh, checking the various birds and making a casual search for nests. Among the birds checked were two Maryland Yellow-throats, male and female, a pair of birds whose nest had successfully eluded me from year to year. It is true that on June 1, 1911, I found their nest in the tall bull-rushes near one side of the marsh, but not until the young were preparing to leave. Very naturally, what I wished to find was a nest containing eggs.

So I stopped, shed my coat and hung it on a tiny persimmon tree growing

in the marsh, and began my search for the nest of that small Warbler. Common sense advised me to begin at the site of the former nest; so I slowly made my way through the rushes and grasses and was soon parting the tops of the particular clump which in 1911 hid the tiny nest. With a quick gasp, I stopped in my tracks, for the moment not comprehending my find. For there before me, not a foot from my hands, lay the elusive nest. No, not a nest of the Maryland Yellow-throat, but a nest of the Louisiana Clapper Rail (*Rallus crepitans saturatus*) containing eleven eggs. Though for the moment dizzy with my good fortune, I soon recovered and began to look around for Mrs. Rail. Though I searched for some time and watched carefully in the vicinity of the nest, she was not observed.

The following afternoon, on June 7, I returned to the nest in company with Mr. Geo. B. Ewing of Houston, this time armed with a 3-A Folding Brownie. A careful search failed to reveal a single rail, but the nest was just as we had left it, so we got busy by promiscuously shooting at the nest and general surroundings with the Brownie. To beguile the remainder of the two hours spent in the vicinity, each of us took turns in snapping the other in approved ornithological pose, namely: standing by the nest, chest expanded, and with one hand parting the rushes to show the eggs while the other allows its thumb to snuggle in the arm-hole of the vest.

During the last few moments at the nest I had been pondering whether or not it would be best to take the eggs, for it seemed that they must be deserted. As much time as we had spent at the nest on the two trips, not a rail had we seen. Finally I came to my decision: Should the eggs be in condition to blow



Fig. 2. NEST AND ELEVEN EGGS OF THE LOUISIANA CLAPPER RAIL, AS PHOTOGRAPHED JUNE 7, 1914. OBSERVE HOW SECURELY THE NEST IS SET AMONG THE RUSHES, OVER A FOOT ABOVE THE GROUND, SO THAT IT IS OUT OF REACH OF HIGH WATER

with comparative ease I would take them home with me; otherwise I would take the chance of the bird returning to them by leaving them in the nest. Picking one up, and hooking my thumb and forefinger about it, I placed it to my eye; with the sunlight on the opposite side I could note that incubation was advanced.



Fig. 3. ANOTHER VIEW OF THE NEST OF THE LOUISIANA CLAPPER RAIL,
SHOWING DETAIL OF CONSTRUCTION

But just as I held the egg to the sun, between thumb and finger, there came an awful clatter from the grassy jungles near at hand, the protest and expression of indignation of the parent at my conduct: "*CHACK, CHACK, CHACK, chack, chack, chack!!*" As if to say, "*HEY, YOU, put that egg back!*" The first syllable was loud, harsh and startling, and each succeeding one

slightly less in volume. It was so unexpected and so discordant that I nearly jumped out of my skin (figuratively speaking), entertaining the feelings of a pedestrian who hears a shrieking auto siren at his back. I could see that Ewing was affected the same way, for he turned pale with fright and was about to crawl under a nearby bush. I saved him from that undignified proceeding by explaining that it was merely our friend *Rallus*, which had doubtless been watching us with tolerance, until we touched her eggs, from a distance of about fifteen feet.

Four days passed before I visited the nest again. On Thursday Mr. Howard G. Hill and I made the trip across the prairies, approaching the marsh from opposite sides. I had a trusty Graflex ready to spring, but no bird appeared. For over an hour and a half we waited patiently near the nest, *sans* coat, *sans* sleeves, under the blistering rays of the tropical sun, with the nearest shelter three miles away. But all to no avail.



Fig. 4. NEST AND EGGS OF THE SOUTHERN MEADOWLARK, PHOTOGRAPHED NEAR HOUSTON, TEXAS, JUNE 11, 1914

The nest was built up in a clump of rushes and grass, thirteen and a quarter inches above the ground, and was neatly hidden by the thick growth of rushes closely surrounding it on all sides. It was a thick mass of vegetation (buffy rushes and grasses) five and a quarter inches thick, supported by the broken stalks of the rushes and by a small vine which had entwined itself about the stalks below. The top of the nest was slightly concave, the edges being an inch and a quarter above the center, and we found it to measure nine and a half inches from rim to rim.

The eggs were quite soiled and stained, being splashed and spattered with the oozing slime of the marsh; they were light buffy specimens, marked with small spots and specks of a reddish brown which were distributed in an irregular circle near the extremity of the larger end. They measured in inches: 1.76x1.23; 1.69x1.19; 1.68x1.18; 1.67x1.19; 1.66x1.20; 1.66x1.17; 1.64x1.20; 1.63x1.22; 1.63x1.19; 1.63x1.17; and 1.62x1.21.

Finally, becoming tired of the wait, and eringing from the blasting heat of the summer sun, we scoured the neighboring grassy jungles in an effort to rout out the owner of the nest, but not a "hide nor hair" did we see.

The eharacteristic birds of the two-acre marsh were raising a considerable disturbance. A pair of Kingbirds had a nest in a small locust tree by the side of the railroad traek on the edge of the marsh, and were quite solicitous about the two young which it contained, flying and twittering about our heads. A few nests of the Florida Red-wing still contained eggs, probably second settings. One held four eggs, rather unusual for the bird in the vicinity of Houston. Now and then a Florida Nighthawk would float lightly by. And the Seissor-tailed Flycatchers, Southern Meadowlarks, Orchard Orioles, Western Lark Sparrows, Western Grasshopper Sparrows, and Diekeissels were twittering, singing and buzzing, and probably all were nesting near at hand.

A hundred yards north of the nest of the Louisiana Clapper Rail, and just outside the limits of the marsh, we did indeed flush a Southern Meadowlark from her arched or domed nest containing four nearly fresh eggs. It was cunningly concealed under a tussoek of grass, slightly sunk in the ground and well lined with dry grasses.

The rails evidently deserted the nest after our eareless handling of the eggs; for, though several trips followed that of June 11, not a bird was seen in the marsh. The nest gradually acquired a deserted air, soon appearing weather-beaten and rough. The eggs, by the way, are still in the nest, abandoned to the mercy of the elements. Let us trust that next season the rails will have less hardships and nest under more favorable conditions.

Houston, Texas, August 19, 1914.

THE NESTING OF THE BLACK SWIFT

A Vindication

By WILLIAM LEON DAWSON

WITH FOUR PHOTOS BY THE AUTHOR

ALL THE TRADITIONS and expectations of ornithologists were set at naught when A. G. Vrooman, of Santa Cruz, announced (*Vide Auk*, Oct., 1901, p. 394) that he had taken the single egg of the Black Swift (*Cypseloides niger borealis*) from the bare damp earth of a sea-cliff. It seemed incredible, and the writer was among those who indulged in cheap witticisms at the expense of this newest aspirant to oölogical honors. Not even with the announcement of a second discovery, July 9, 1904 (reported in the CONDOR, Nov., 1905, p. 176), was our unfaith shaken, although that astute connoisseur, Col. John E. Thayer, of Boston, made haste to secure the eggs and was so delighted that he wanted more. We thought we knew our Swifts and we did not know Mr. Vrooman. Moreover, we had been disappointed once before (see last volume of CONDOR, p. 95), and did not propose to be hoaxed again. Vrooman's announcements fell coldly, therefore, upon the public ear; and their author, a sensitive and conscientious man, relapsed into pained silence.

For this unpublished naturalist, be it understood, was no upstart. At the

time he wrote he had neatly labelled skins of *Cypseloides niger borealis*, *Aeronautes melanoleucus* and *Chaetura vauxi* ranged alongside in his cabinet. A keen eye and unquenchable enthusiasm for field work, together with twenty years experience at Santa Cruz, had left this man of forty the possessor of a nearly complete collection of both skins and eggs of the local birds. He was in a position, therefore, to know, and to know that he knew when he spoke of Black Swifts. It was double pity, too, that we heard him first with unbelieving ears, because this patient student of nature proves to be a man of many pleasant qualities. Hospitable and generous to a fault, he is also vivacious and humorously picturesque in speech. His mind is well stored with incident and example of bird-lore, and his enthusiasm in things out-of-doors is so contagious that he makes an ideal field companion. For all this, Mr. Vrooman has never traveled largely, save to and from his old home in New York State, and he has kept his ornithological light under an ancient bushel.

But if Mr. Vrooman fell silent over the skepticism which greeted his announcements, he did not remain idle. Every succeeding June found him searching the sea-cliffs of that indented shoreline west of Santa Cruz for a



Fig. 5. A BIT OF SANTA CRUZ COAST

stretch of thirty miles. Battling with the unceasing wind which rages along that coast, he crept along ledges, peered over precipices, shook his rattle-can down wave-lashed hollows, or else lay on his back for hours at a time, trying to unravel the purposes of some wandering *Cypseloides*. Failure attended his early efforts as often as success. Of the thirteen seasons spent in this quest since the original discovery, four went unrewarded. Nevertheless, as the years passed, and acquaintance with this bird of mystery deepened, the patient seeker was able to determine certain laws which govern the Black Swift's movements and choices, inasmuch that he is fairly confident of being able to make at least one nesting location each season. What these laws are, it is no purpose of this present article to inquire; for we hold it self evident that the discoverer deserves his luck,—in this instance at least; but we will give an unvarnished account of what befell us under the guidance of this genial naturalist on the 22nd of June last.

The June location of the season of 1914 was made some dozen miles west of Santa Cruz. Even Mr. Vrooman did not know the precise spot from which

the bird would emerge, so we ranged ourselves along the crest of the cliff (Mr. V's son Benjamin and my son William accompanying), while our guide proceeded to make diabolical noises with a "contraption" rigged up for the purpose. Nothing happened for a long time, but finally from some invisible portion of the undercut cliff beneath our feet, a dark form flashed downward, and glided, with strong wing-motion, close to the surface and straight out to sea. It was a Black Swift undoubtedly; but what extraordinary behavior for a land bird! With 8-power binoculars I watched it out of sight. Then we drove a steel pin, shook out a rope ladder which did not quite reach the bottom of the 65-foot declivity, and set about the systematic search of the under-cut seawall. An hour later V. announced his success, and I hastened down to view the treasure—a great white egg, evidently fresh, but somewhat discolored by

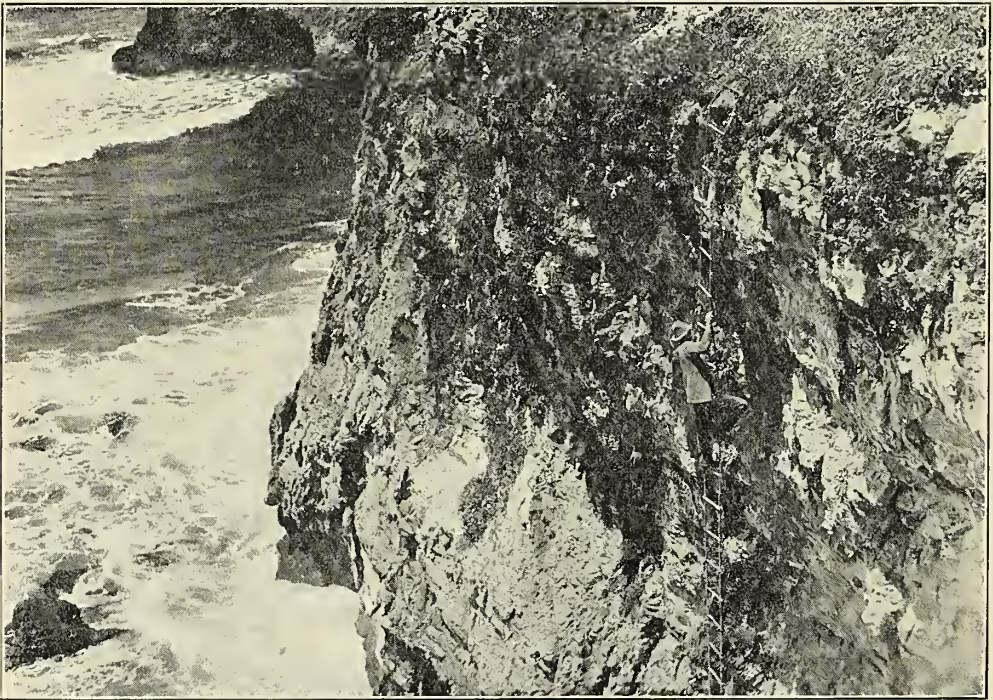


Fig. 6. VROOMAN AT THE SWIFT'S NEST

contact with the moist floor of a clinging root-lashed earthen bracket, from the edges of which wiry green grass grew luxuriantly. I had barely re-ascended when a shout apprised us of the approach of the recreant bird. She came winging splendidly over the water, rose with a sweep toward the nest, saw the swinging ladder hard-by, and swerved sharply. Before we could relieve the situation she had feinted several times and even lighted for a moment on a neighboring cornice; then retired. Hurriedly drawing up the ladder and hastening to a point of vantage, we threw ourselves upon the ground and had the satisfaction of seeing her, a moment later, sweep back and settle upon the nest. The whole situation was as plain as day, but the grasses of the earthen cornice invested the sitting bird so closely that telephotography was out of the question. I could only choose a water-background, therefore, and set my

Graflex for a snap at the flushing bird. Anticipating some speed I did not trust myself to release the shutter after recognizing the bird on the mirror, but held on the water and watched the nest instead. It was well I did so, for when V. let down his "devil-box" abreast of the bird, I pressed the button upon the instant of her emergence. Even so I caught her, a mere black smear on the plate, over the water and some forty feet away from the nest. Again our benefactress winged straight to sea and passed from sight. It *was* a Black Swift, no doubt of that; but it took the sight of other birds hurtling about another sea-cliff in amorous (and as yet unfruitful) pursuit, to confirm the impression of reality.

After "snapping" the egg *in situ* with the Graflex, I packed it away securely and lifted the nesting cornice, earth, grass, rootlets and all, clear of its limestone moorings.



Fig. 7. EGG (No. 11) OF BLACK SWIFT, *in situ*

The egg, figured herewith in comparison with that of the White-throated species, is seen to be about three times larger. This, in view of the fact that the birds themselves are approximately the same size, is a sufficient commentary on its *singular* number. The bird could not take care of many such. The nestling, too, must be much further advanced at the time of hatching than in the case of those species which raise four or five at once. But it is passing strange that this aberrant Swift should ape the sea-birds, notably the Murres, in this respect of having a single large egg.

But although this bird has been caught thus "dead to rights" posing as a sea-bird, I do not for a moment believe that sea-cliffs constitute its habitual nesting site. The Black Swift is properly a bird of the high mountains, and it will be found nesting in the crevices of lofty mountain walls. To cite only re-

cent examples: the writer saw detached pairs of Black Swifts in Kearsarge Pass at an altitude of about 9000 feet, on the 5th day of July, 1913; and a company of forty birds very much at home in the basin of the Little Yosemite River below Nevada Falls, on the 16th of June, 1914. Indeed it is probably only because this stretch of coast above Santa Cruz offers essentially the con-

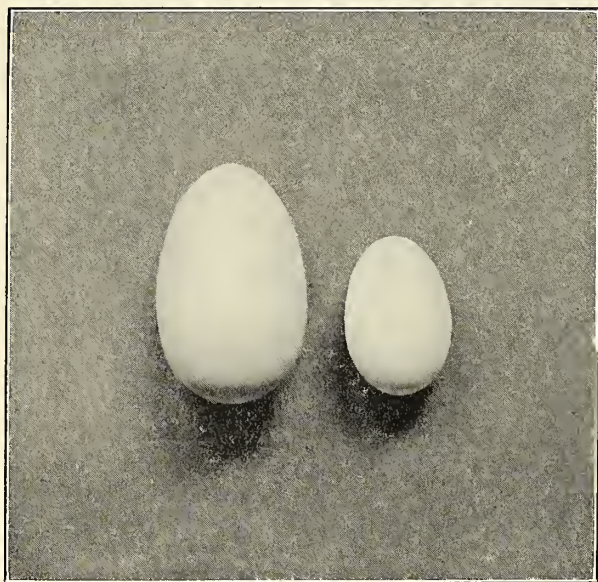


Fig. 8. EGGS OF BLACK SWIFT (THE LARGER) AND WHITE-THROATED SWIFT; BOTH NATURAL SIZE

ditions of cold and moisture found elsewhere only at higher altitudes that the birds have descended to this station. Moreover, the birds, although regularly breeding, are very scarce at Santa Cruz. Mr. Vrooman has never seen the large flocks which are commonplaces to experienced mountain students. Ten or a dozen birds at most are as many as he ever saw at once, and these probably represented the entire population of Santa Cruz County. Otherwise he has never secured tangible evidence of the nesting of above three pairs in one season.

The egg taken on June 22nd measures 1.18x.73 inches, and is the eleventh

of this Santa Cruz series. Nos. 1 to 7 inclusive were secured by Mr. John E. Thayer. The only other perfect egg extant is in the possession of Mr. H. F. Bailey, a close personal friend of Mr. Vrooman; while the discoverer himself retains two broken specimens. To A. G. Vrooman of Santa Cruz belongs the exclusive and distinguished honor of bringing this rare egg to box; and my hat, for one, is off to him for a pretty piece of work.

Santa Barbara, California, July 5, 1914.

THE KERN REDWING—*AGELAIUS PHOENICEUS ACICULATUS*

By JOSEPH MAILLIARD

WITH SIX DRAWINGS

SOMETHING over a year ago the sight of a couple of specimens of redwings from east-central Kern County, California, created in my mind the desire to obtain sufficient material from that locality to compare critically with other forms of *Agelaius*. Finally, last spring, unable to go myself, Mr. Adriaan van Rossem was commissioned to do the necessary field work,

the area selected for his objective being that lying along the southern side of the South Fork of the Kern River, Kern County, California, and also what is known as Walker Basin, between the town of Caliente and the above named river.

Although the expedition was delayed in arriving at the main collecting ground, and consequently the number and stage of plumage of the individuals collected were not up to the desired mark, both are sufficient to make a fair comparison with the nearest forms, the series being composed of twenty adult males and eleven females. Three males were kindly loaned me by Dr. Grinnell, of the California Museum of Vertebrate Zoology, bringing the number of adult males examined to twenty-three. All these specimens were taken too late in the spring to be in very good plumage, and the wings and tails were sadly abraded, while the edging of the feathers was fast being worn away; but the measurements of the more permanent parts being the greatest factors in making comparisons in this instance, the condition of the plumage is of minor importance.

Agelaius phoeniceus aciculatus, new subspecies

Kern Redwing

Type.—Male adult; no. 7593, collection of J. & J. W. Mailliard; Isabella, Kern County, California; May 30, 1914; collected by A. van Rossem.

Subspecific characters.—Similar to *Agelaius phoeniceus neutralis*, but of larger size, feet averaging somewhat larger; but chiefly characterized by a longer, and comparatively more slender bill than any other form of this genus in the United States.

Cotype.—Female adult; no. 7594, collection of J. & J. W. Mailliard; Isabella, Kern County, California; June 1, 1914; collected by A. van Rossem.

Measurements in millimeters.—

		Wing	Tail	Culmen from base	Width bill at base	Depth bill at base	Tarsus	Middle toe without claw
	Type, ♂ adult	125.3	93.5	27.6	9.6	12.7	30.3	23.3
21 adult males.....	{ Min.	122.2	83.6	25.1	9.1	11.1	28.8	21.9
	{ Max.	131.1	98.8	31.4	10.1	13.7	30.4	24.4
	{ Ave.	126.2	92.4	27.2	9.7	12.4	29.5	23.1
	{							
	Cotype, ♀ adult	115.4	78.0	23.1	8.3	10.3	25.8	20.6
11 adult females....	{ Min.	111.4	72.8	21.2	8.0	10.3	25.1	19.0
	{ Max.	115.5	78.3	23.9	9.0	11.6	27.1	21.4
	{ Ave.	113.9	76.3	22.9	8.2	11.0	25.7	20.3
	{							

Range.—So far this form has only been found in east-central Kern County, California, in the Walker Basin, just north of the town of Caliente, and on the South Fork of Kern River, between Isabella and Onyx, thus probably being restricted to a very small range.

Remarks.—The length of a skin is not of much value unless specimens are so prepared as to approximate fairly closely the original flesh length, or unless this measurement is used only in comparing a number of skins put up by the same person. In this particular instance 31 skins of male *A. p. neutralis* were compared with 20 skins of *A. p. aciculatus*, and the result showed an average length of 211 mm. for the former and 221 mm. for *aciculatus*, with a similarly proportionate difference among a number of females compared under like conditions. These measurements approximate those of *A. p. fortis*, which is supposed to be the largest form of *Agelaius*.

The wing and tail measurements of *aciculatus* indicate greater length than any other United States form, but the plumage was so badly worn and abraded at the late date at which the specimens were collected—last of May and first of June—that they are not of sufficiently definite value in the determination of comparative size. The greater size of *aciculatus* seems to be more a matter of length of actual body than of comparative length of bill and tail.

As far as coloration and markings are concerned this form seems to be between *neutralis* and *nevadensis*, both racially and geographically, and appears to have been developed by some unknown factor in the small area it must occupy among the foothills of the southern Sierra. Specimens of *Agelaius* taken at Buena Vista Lake, thirty or forty miles west of this area, and across the plains, are indistinguishable from the general run of *neutralis*, while the form on the east is *sonoriensis*, and that on the northeast is Grinnell's new form, *nevadensis*.

The average and the maximum measurements of the culmen (from base) and of the middle toe (without claw) of both male and female *aciculatus* are greater than any similar measurements given by Mr. Ridgway in his *Birds of North and Middle America* for any subspecific form of *Agelaius*, as well as

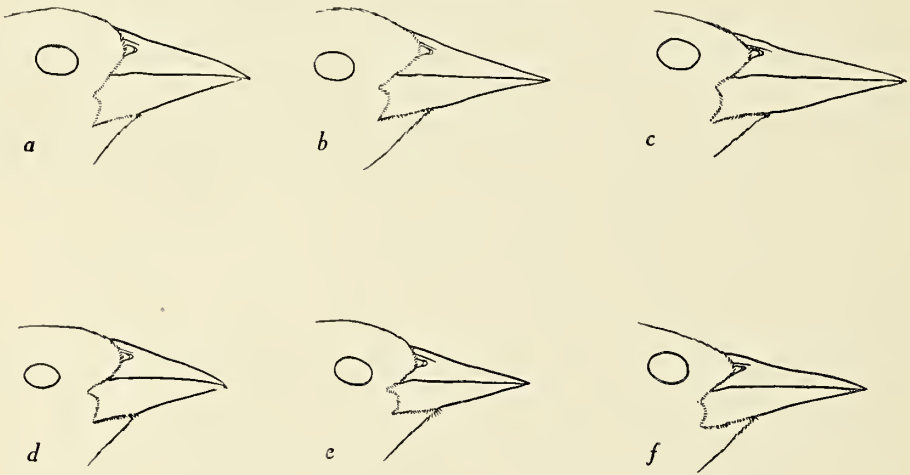


FIG. 9.

- a. *Agelaius p. neutralis*, ♂ ad., no. 7508, coll. J. & J. W. Mailliard; culmen from base 23.2 mm., depth of bill 13.6, width of bill 10.0.
- b. *Agelaius p. nevadensis*, ♂ ad., no. 8806, Mus. Vert. Zool.; culmen from base 23.6, depth of bill 11.7, width of bill 9.7.
- c. *Agelaius p. aciculatus*, type, ♂ ad., no. 7593, coll. J. & J. W. Mailliard; culmen from base 27.6, depth of bill 12.7, width of bill 9.6.
- d. *Agelaius p. neutralis*, ♀ ad., no. 7520, coll. J. & J. W. Mailliard; culmen from base 20.4, depth of bill 10.1, width of bill 8.0.
- e. *Agelaius p. nevadensis*, ♀ ad., no. 8807, Mus. Vert. Zool.; culmen from base 20.6, depth of bill 8.9, width of bill 7.5.
- f. *Agelaius p. aciculatus*, cotype, ♀ ad., no. 7594, coll. J. & J. W. Mailliard; culmen from base 23.1, depth of bill 10.3, width of bill 8.3.

Note: The individuals were selected for the above drawings as being nearest to the average measurements of the forms designated.

greater than any I have come across elsewhere, or taken myself. While personally opposed to such extreme subspecification as is sometimes indulged in, and which necessitates a well-trained expert to make determinations, this case seems so obvious to the ordinary observer that I do not hesitate to present it to the ornithological public.

San Francisco, California, October 26, 1914.

THE STATUS OF THE ARIZONA SPOTTED OWL

By H. S. SWARTH

(Contribution from the Museum of Vertebrate Zoology of the University of California)

SINCE my description several years ago of *Strix occidentalis huachucae* (Univ. Calif. Publ. Zool., vol. 7, 1910, p. 3), I have been constantly on the lookout for opportunities of examining additional specimens of this race, but until recently was unaware of the existence in collections of any examples of the Arizona subspecies other than the single bird that served as a basis for the characterization of the form. A short time ago Dr. Louis B. Bishop informed me that he had in his possession three skins taken in southern Arizona, and he most generously proffered the loan of these specimens in case I was desirous of making comparisons with the type, or with other pertinent material. This opportunity was eagerly grasped, the more so that there happened to be available in the several collections on deposit in the Los Angeles County Museum of History, Science, and Art, a number of skins of the California form, *Strix occidentalis occidentalis*, affording an excellent chance for a critical study of these two subspecies. In fact it is doubtful if such an extensive series of these owls has ever before been gathered together at any one point.

Of the Arizona bird I have before me the type of *huachucae*, from the Huachuca Mountains, and Dr. Bishop's three specimens, a pair of adults and a juvenile male, collected by H. H. Kimball, in the Santa Catalina Mountains, July 7, 1906. Of the southern California subspecies, *S. o. occidentalis*, there are available skins of eleven adults and one juvenal, and a mounted pair of adult birds. The two series afford a quite satisfactory basis for comparison.

In general it may be said that the three additional examples from Arizona bear out most of the characters originally ascribed to *huachucae* from the single specimen serving as the type. Judging from this material the Arizona race, as compared with typical *occidentalis*, is somewhat paler colored. The brown body color of the whole bird is of a lighter tint, while on the individual feathers the brown colored portion is diminished in area, and the white portion correspondingly extended.

The California series shows but little variation, the birds being uniformly quite dark and heavily marked, while spring specimens show an almost inappreciable amount of fading, as compared with freshly molted fall birds. That there is slight change in the color of the feathers through fading is doubtless largely due to the manner of life of these birds, they being habitually frequenters of the darkest, shadiest canyons, avoiding bright light at all times.

Of the Arizona birds, the single adult female is slightly darker than the

two males, this being most apparent in the heavier markings on the tarsus and toes of the former. There is some indication that the arid climatic conditions surrounding this form are conducive to rather more marked fading of plumage in the course of months, than is the case with the California bird; and this too despite the fact that the mode of life of the two subspecies is practically the same. In the juvenile example of *huachucac* the newly grown rectrices and remiges are noticeably darker than is the case with the adults, taken in April and July. In typical *occidentalis*, taking specimens similarly comparable, the difference is inappreciable.

Careful comparison of the two series, from California and from Arizona, respectively, shows the following dissimilarities, aside from the generally paler coloration of the latter subspecies.

Facial discs: In *huachucac* these are noticeably grayish. The ground color of the anterior two-thirds is practically pure white, of the posterior margin, light brown. There is little variation in the three specimens. In *occidentalis* this part is quite uniformly dark brown, with a limited grayish area anteriorly.

White spots on individual body feathers: Careful analysis of patterns of separate feathers from any part of the body shows throughout an extension of the white areas, with corresponding reduction in brown, in *huachucac* as compared with typical *occidentalis*. This is quite noticeable, for example, in the plumage of the upper breast, where a feather that, in *occidentalis*, is brown with two white spots, in *huachucac* frequently will have the two spots coalesced, producing a barred feather instead of a spotted one.

Tail bars: In *huachucac* the tail bars are broader, and are more nearly pure white. The tendency in *occidentalis* is for them to become broken into spots. In both races the number of tail bars varies in different individuals and on different feathers, ranging from six to eight in number.

White spots on outer webs of primaries: In *huachucac* these are broader, more nearly white, and generally more conspicuous.

Throat and median line of abdomen: The throat patch in *huachucac* is pure white, and covers a relatively large area. In *occidentalis* the unmarked portion is rather more restricted, and is frequently buffy or grayish in color. The center of the abdomen is more nearly pure white in *huachucac*, as compared with the duskier hue usually seen in *occidentalis*.

Tarsus and toes: In the two adult males of *huachucac* tarsus and toes are almost pure white, sparsely flecked with pale brown. The single adult female at hand has these parts much more heavily marked, being in this respect quite like certain examples of *occidentalis*, though in most specimens of the latter form the legs are somewhat darker. It is noteworthy that in the juvenile male of *huachucac* tarsus and toes are pure white, unmarked, while the juvenile female of *occidentalis* at hand has these parts heavily marked. The inference that might be drawn from these facts is that the observed variation in color and markings of toes and tarsus is to some extent due to difference in sex. This, however, is not corroborated by conditions in the series of adult *occidentalis*. In the two juvenals described in my previous paper on the species (Univ. Calif. Publ. Zool., vol. 7, 1910, p. 7), toes and tarsus were pale colored and unmarked, but unfortunately the sex of these birds had not been ascertained.

Under tail coverts: These are parti-colored feathers of white and brown. In *huachucac* the white areas are the most extensive, while in *occidentalis* the

reverse is usually the case. In the California bird the white is in relatively narrow bars, generally not so broad as the brown portions, though in an occasional feather the two will be found of practically equal width.

Two birds in juvenile plumage are available for comparison, of *occidentalis* a young female, taken at Forest Home, San Bernardino County, California, August 17, 1913; of *huachucae* a young male from the Santa Catalina Mountains, Arizona, July 7, 1906. The Arizona bird is clothed entirely in the juvenile down, except for the nearly grown rectrices and remiges; the California bird is somewhat older, and new feathers are appearing on the sides of the body, in the scapulars, and in the wing coverts. There is little difference apparent between these juvenals. In fact I am not able to distinguish with certainty any color difference in the down of the two birds, though the Arizona specimen appears to be slightly more tawny where the other is rather more gray. In the newly grown rectrices and remiges, however, there is a difference, these feathers in the Arizona specimen being distinctly of a lighter tint, as compared with the more dusky ones of the California example.

As might be expected, examination of so much additional material is productive of slightly altered conceptions from those derived from the single specimen of *huachucae* which served as the basis of my first study of the species. The differences between the two forms here contrasted are, of course, of degree rather than of kind; and it is to be expected that more extensive suites of skins would reveal considerable variation in characteristics. On the whole, however, taking Spotted Owls from the designated regions, as represented by the quite satisfactory material here assembled, there is no difficulty whatever in distinguishing the two forms, *Strix occidentalis occidentalis* and *Strix occidentalis huachucae*.

It may be argued that the comparisons so far made are not final, in that no example of *huachucae* in fresh fall plumage has been available; and that even though certain appreciable differences are shown in birds taken at approximately the same season in spring or summer, in Arizona and in California, respectively, it is not proved that these differences are not due to a greater rate of fading in one region than in the other. This might be partly true of the different shades of brown shown in the two races (though I doubt it), but the difference shown by the two forms in the relative areas occupied by brown and by white on the parti-colored feathers of which practically the entire plumage is composed, a maximum of brown in the California bird, a maximum of white in the Arizona race, is a feature that is not dependent upon long wear and consequent fading of the birds' covering. Then again, in the juvenals of the two forms, as described above, the new rectrices and remiges are of distinctly different shades of brown.

As shown in the accompanying table of measurements, *huachucae* appears to be of slightly smaller size than typical *occidentalis*, though judging from the range of variation shown in the latter series, the apparent size difference in the races may be due to the small number of Arizona specimens examined. However, taking everything into consideration, there seems sufficient reason for the recognition of the Arizona race of the Spotted Owl. The four specimens examined show a certain range of variation, as is to be expected, but any of them can readily be distinguished from the California form. The extensive series of the latter subspecies available does not contain any specimens with characters at all like those of the Arizona birds.

Geographically the two forms appear to be absolutely and widely separated. Between the mountains of the San Diegan district of southern California, comprising the habitat of *occidentalis*, and the mountains of southeastern Arizona, where *huachucae* occurs, lies a stretch of desert several hundred miles in extent, forming an impassable barrier between the two. The Spotted Owl is a bird of the high Upper Sonoran and Transition zones, and is nowhere known to have occurred at any Lower Sonoran locality. Furthermore, it is restricted associationally, showing marked preference for heavily timbered regions; such places in the habitats of *occidentalis* and *huachucae* being almost invariably shady canyons or densely wooded hillsides. Although the Upper Sonoran zone extends quite continuously from southeastern Arizona northward into central Nevada, and then westward into California, and there might be deduced from this a continuity of range of one form with the other, such argument would be fallacious, for this region is the extremely arid Upper Sonoran of piñon and juniper, offering nothing to a bird with the requirements of the Spotted Owl.

The species has not so far been found in northern Arizona, nor is it known from the east slope of the Sierras, in California, so that altogether it seems highly probable that there is an extensive hiatus between the regions inhabited by the Spotted Owl in southern Arizona and in southern California. It is to be expected, of course, that segregation amid widely different surroundings, acting upon a non-migratory animal, would be productive of some variation in the inhabitants of the different regions. Furthermore, the observed differences distinguishing the few known specimens of the Arizona race from the California subspecies, are exactly such as we would expect to find, reasoning from analogous cases among other animals of similar distribution. Thus there seems to be ample justification for the recognition of the differences existing between the California and the Arizona races of *Strix occidentalis*. As to the relationship of the latter, the Arizona bird, to the form of Spotted Owl occurring southward over the table land of Mexico, that is another matter, to be determined by future study of more material than is now available.

As stated above, the opportunity I have enjoyed of making the comparisons herein recorded, is primarily due to the consideration of Dr. Louis B. Bishop, in loaning me his Arizona specimens. Of the other skins examined, the type specimen of *S. o. huachucae* was borrowed from the California Museum of Vertebrate Zoology, where it is on deposit as part of the Morcom collection; while the examples of *S. o. occidentalis* are all either from the collection of the Los Angeles Museum of History, Science, and Art, or of the several individuals who have their collections on deposit in that institution. Their names appear in the appended list of specimens, and to each one I wish to express my appreciation of the privilege I have enjoyed.

Accompanying is a list of the specimens upon which this study is based. The examples of *S. o. occidentalis* are all from points in the San Diegan district, southern California; of *S. o. huachucae*, from southeastern Arizona. For the sake of the measurements I have included several skins not actually handled at this time. The data pertaining to these is copied from my previous paper on the species, before cited, and these skins, during the preparation of that paper, were carefully compared with the one example of *huachucae* then available.

Strix occidentalis occidentalis

No.	Sex	Collection of	Locality	Date	Wing	Tail
1392	♂	G. Willett	Monrovia	Nov. 9, 1913	314	203
1394	♂	G. Willett	Monrovia	Nov. 3, 1913	320	205
152 ¹	♂	J. Grinnell	Pasadena	Nov. 30, 1894	321	197
1674 ¹	♂	H. S. Swarth	Pasadena	Oct. 22, 1900	328	206
1675 ¹	♂	H. S. Swarth	Pasadena	Oct. 22, 1900	326	212
.... ¹	♂	G. F. Morcom	San Diego Co.	Oct. 11, 1885	318	207
130 ²	♂	Mus. Hist., Sci. and Art	Castaic Canyon	Apr. 1, 1909	...	...
151 ¹	♀	J. Grinnell	Pasadena	Nov. 30, 1894	323	213
1477	♀	J. E. Law	San Dimas Canyon	Dec. 9, 1913	326	207
1393	♀	G. Willett	Monrovia	Nov. 3, 1913	326	208
829	♀	G. Willett	Fillmore	Dec. 13, 1910	320	205
830	♀	G. Willett	Fillmore	Dec. 13, 1910	314	193
494	♀	C. H. Richardson	Mt. Wilson	Mar. 21, 1905	325	214
5589	♀	F. S. Daggett	San Dimas Canyon	Feb. 14, 1903	322	209
....	♀	L. H. Miller	Castaic Canyon	Apr. 10, 1911	...	213
131 ²	♀	Mus. Hist., Sci. and Art	Castaic Canyon	Apr. 1, 1909	...	...
1395	?	G. Willett	Monrovia	Nov. 3, 1913	330	208
....	?	Mus. Hist., Sci. and Art	Newhall	May 20, 1906	...	...
....	♀ juv.	L. H. Miller	Forest Home	Aug. 17, 1913	...	...

Strix occidentalis huachucae

(3691) ³	♂	G. F. Morcom	Huachuca Mts.	Apr. 11, 1903	318	192
16876	♂	L. B. Bishop	Santa Catalina Mts.	July 7, 1906	314	188
16877	♀	L. B. Bishop	Santa Catalina Mts.	July 7, 1906	323	200
16878	♂ juv.	L. B. Bishop	Santa Catalina Mts.	July 7, 1906	...	...

¹Specimen not examined in the present connection.

²Mounted bird; not available for measurements.

³Type; no catalogue number. Number given is that of the field note book of the collector, H. S. Swarth. Specimen on deposit at the Museum of Vertebrate Zoology, Berkeley, California.

Los Angeles, California, November 15, 1914.

NIAGARA AT YOUR DOOR

An Appeal to San Franciscans

By WILLIAM LEON DAWSON

WE HAVE all heard of the family which having been resident for fifty years at a point seven miles from Niagara, finally scraped enough money together to come to California—without ever having seen Niagara Falls. We are glad they came, of course, and we will not chide them; because we are fearful lest they in turn should ask us Californians certain embarrassing questions. Let us see!

One afternoon in July, 1912, viz., the 21st, during a three-day sojourn in your beautiful city, I was delighted to find that the famous Seal Rocks off the mouth of the Golden Gate were thickly populated with a nesting colony of Farallon Cormorants. There were five hundred birds, by count, on the shoreward aspect of the largest rock (in delightfully plain view from the portico of the Cliff House, as every one knows), and it seemed probable that as many more were occupying the seaward slopes. Inasmuch as I had on all former occasions beheld these rocks practically monopolized by Steller Sea Lions, I was very much interested, and became, naturally, curious as to further developments. Not being privileged to follow the fortunes of this notable colony

in person, I asked one of the senior resident members of the Cooper Club, a man justly renowned both as an observer and student of California bird-life, to report on conditions there during the past two years. His reply just to hand, is frank and illuminating: "I know no more of the Phalaeroeoraxes on Seal Rocks, off the Golden Gate Park here, than a cat does of eataehresis, more's a pity! I do not get out to the ocean shore once in two years * * * At Pigeon Point, Point Lobos, and the rocky islands around Monterey Bay they breed in numbers, as you most probably are aware, but when it comes to *Seal Rocks* right under my nose, as it were—you have me guessing."

Now if I had any thought that this veteran brother would take offense (he is rather fond of "ragging" the rest of us, by the way) I should not publish this inquiry. But knowing him for a game sport, I shall not scruple to point my moral. I am honestly desirous of learning something definite about this wonderful living "habitat group" of breeding Cormorants (to be reproduced in effigy by the California Academy of Sciences at great expense, and installed at only a few furlongs remove from this real example). Doubtless if I had the addresses of some few of the tens of thousands of tourists who have gazed in wonder and admiration at this ebony pageant exhibited upon your very doorstep, visitors who, as you boast, come flocking from every clime of the habitable globe, I should learn what I need to know about your Shags. But I appeal to you, dwellers by Niagara, twenty of you (fifty-seven in the Bay Cities), if the Cooper Club lists are correct, your very faces wet daily by the spray struck off from the surf dashing on the Seal Rocks, what do you know about these birds? This is the year you have invited us to share your hospitality, to view your charms, to taste your fare, to pass judgment upon your vaunted achievements, to decide, it may be, whether we will abide with you. We are coming, ourselves a human Niagara, ten thousand thousand strong. In particular, we of the Cooper Club and American Ornithologists' Union are coming half a thousand strong. Are you prepared to receive us? Are you ready to guide us? If we grant you absolution for voluntary ignorance of the presumed banalities of the always "famous" Seal Rocks, will you show us instead the feathered treasures of Stow Lake, and Muir Woods, and Mt. Tamalpais, and Mill Valley, and San Bruno, and Wild Cat Canyon? Or will you leave us to suppose (very incorrectly) that the immediate setting of the Bay Cities is destitute of avian attractions? "The Farallon Islands", yes! and "Lake Tahoe", by all means! But let us also view you *at home*. We are coming to see San Francisco's Niagara.

Santa Barbara, California, December 10, 1914.

BIRDS OBSERVED ON FORRESTER ISLAND, ALASKA, DURING THE SUMMER OF 1913*

By HAROLD HEATH

WITH EIGHT PHOTOGRAPHS AND ONE DRAWING BY THE AUTHOR
(Contribution from the Department of Zoology, Stanford University, California)

IN THE latter part of April, 1913, the writer was appointed to conduct a biological survey of the Forrester group of islands, Alaska, under the joint auspices of the United States Fish Commission and the National Associa-

*Printed by permission of Doctor Hugh M. Smith, United States Commissioner of Fisheries.

tion of Audubon Societies. The field-work extended from May 16 until August 9 of the same year. Geographically this archipelago lies thirteen miles to the southeast of Dall Island, the waters surging through Dixon Entrance rush past its shores, and the southeastern Alaskan boundary line barely clears the rocky islets fringing its southernmost extremity. The main island measures



Fig. 10. CLIFFS ALONG THE NORTHWESTERN FACE OF FORRESTER ISLAND, SOUTHEASTERN ALASKA

approximately four and one-half miles in length by one in greatest width, and to the north and south is separated by comparatively narrow, tide-swept channels from several other islands. Two of the latter, Lawrie and South, are fully one-third of a mile in greatest diameter, and support a fairly heavy and varied growth of trees and shrubs.

In cross-section the main body of Forrester Island presents the appearance of a triangle the apex of which coincides with a prominent ridge extending in a general north-and-south direction. Five distinct peaks appear in this backbone, forming a graded series of approximately eight hundred feet height on the north, to thirteen hundred and ninety-five feet in the case of the southernmost which is placed somewhat to the south of the center of the island. To the westward the land falls away toward the sea at a more abrupt angle than on the east—probably as twenty is to fifteen degrees—, but in the vicinity of the sea the descent is far more rapid. On the northwest face of the island, for example, the cliffs rise from the sea to a height of three to four hundred feet at angles varying from fifty to eighty degrees. This same state of affairs continues along the entire west coast, though in a general way the height varies directly as the distance from the southern extremity. In other words, as one traverses the coast from north to south the cliffs will be found to retain their precipitous character, although their elevation becomes less and less. Along the eastern border of the island the cliffs are comparatively low with the exception of those in the neighborhood of the highest peak, where they attain a height of two or three hundred feet.

As noted previously several islands lie to the north of Forrester Island, but almost without exception they are comparatively barren surf-beaten rock masses without safe harbors or landing places except in the calmest weather. Lawrie Island, on the other hand, has a much greater area, measuring approximately one third of a mile in greatest length, and is fairly flat and moderately wooded. In the intervening glades grass and wild flowers grow in rank profusion, a small spring supplies water of fair quality, and were it not for the fact that there is no adequate harbor the place would make an ideal camp site. In ancient times members of the Haidah tribe made it their headquarters during the summer months, and even yet resort to its shores for their wood supply, although the shores are boulder strewn and highly unsafe in stormy weather.

Of the three islands to the south of Forrester, the middle one, here provisionally named South Island, was the only one examined critically, since it is much the most important, and the weather was suitable for landing on a very few days only. While its area is somewhat less than that of Lawrie it is far more rugged, with two main hills, perhaps one hundred and twenty-five feet in height, separated by a central ravine a few feet above tide level. Along the southern face these hills fall away abruptly to the sea, and on the cliffs thus formed, innumerable sea birds find a home.

VEGETATION.—The vegetation of Forrester Island is extensive and varied. Fully nine-tenths of its surface is covered with a moderately heavy growth of Sitka spruce (*Picea sitchensis*) and hemlock (*Tsuga heterophylla*), with the intermediate spaces overgrown with dense thickets of salmonberry (*Rubus spectabilis*), three species of huckleberry (*Vaccinium*), and elderberry (*Sambucus callicarpa*), together with devil's-club (*Echinopanax horridus*) in painful profusion. Skunk cabbages (*Lysichiton camtschatcense*) grew in some of the marshy districts to an enormous size, many of the leaves reaching a length of over five feet; while moss and lichens, of several different species, were omnipresent, and formed a beautiful though watersoaked carpet variegated with flowers of many tints. All of these features together with precipitous rocky outcrops, windfalls without end, and the absence of trails, render travel slow and difficult.

In sharp contrast to this jungle is a relatively large open meadow, about the center of the island, overgrown with heather and set with several exquisite pools in which the yellow water lily (*Ammodenia peploides major*) abounds and the eagles find bathing places. It is worthy of note that several of the Haidah Indians report that fifty or sixty years ago the entire island was much more open than now. Salmonberry and huckleberry thickets were unknown and grassy slopes predominated. Still earlier, according to tradition, the groves of spruce were likewise more open, and apparently the entire place was more like Lawrie Island is at the present time. As will appear later on in the account, this may explain the absence of the Rhinoceros Auklet and the Ancient Murrelet from places where they were formerly abundant.

It is also worthy of note that the dwarf juniper (*Juniperus communis*), together with greatly stunted lodgepole pines (*Pinus contorta*), are fairly abundant in the lake region. This same locality is also the home of the west-



Fig. 11. LOOKING SOUTH FROM THE LAKE REGION; LODGEPOLE PINE GROVE IN THE FOREGROUND

ern red cedar (*Thuja plicata*), though the trees are all small as though recently introduced.

I am greatly indebted to my son Ronald, whose keen sight and agility resulted in many observations which have added much to the value of this report. To Mr. W. D. McLeod, acting as interpreter, naturalist, guide and genial companion. I am also under deep obligation. Captain John, an unusually keen and accurate naturalist of the Haidah tribe, was also of the greatest assistance. Mr. John Beatty, Thaddaeus Isaac, George Haldane and Edwin Scott were also valuable helpers during the course of the survey.

LAND BIRDS.—Naturalist fishermen and others with accurate powers of observation and extended knowledge of the country declare that the land birds are more numerous on Forrester Island than at any other point in southeastern Alaska. This may be accounted for, in part at least, by the report that the

path of migration follows the coast, and Forrester accordingly serves as a way station. It is certainly true that there are few natural enemies on the island and an abundant food supply which factors render the reservation well-nigh ideal. Furthermore, the immediate region, especially to the east of Dall Island, is the feeding ground of a large number of migrant water birds, so that accurate observation during a few seasons would doubtless add materially to our knowledge of many matters connected with the time of migration, the route pursued and nature of food supply. The following species of land birds were positively identified during our visit. Where any doubt existed specimens were secured and later determined at the California Museum of Vertebrate Zoology.

1. ***Haliaeetus leucocephalus alascanus***. Northern Bald Eagle. This northern representative of the national bird numbers at least one hundred and fifty individuals on Forrester Island. Almost every headland has its aerie, and several nests were also found on the islets to the north and south, while the young, from one to four years old, inhabit the same or intermediate regions. Generally speaking their reputations, like those of their congeners to the southward, are distinctly bad. In pleasant weather when the sea is fairly calm they may be seen to soar out from some elevated perch, and the return trip is usually made with a herring in their talons; but when the summer season opens the bill of fare very frequently includes birds, both young and old. Remains of Cassin Auklets, Ancient Murrelets and Rhinoceros Auklets are frequently encountered on the hillsides, especially in the vicinity of eagle's nests, and this fact together with the reports of the natives fixes the blame on the king of birds. Young gulls and murrens are also readily and frequently captured; and on the larger islands to the north and east numbers of fawns are struck down, so that between the eagles and the wolves the deer are fast disappearing. In the neighborhood of the salmon canneries they act as scavengers, and astonishingly large numbers congregate in such situations. In the neighborhood of Waterfall, near the north end of Dall Island, fifty-seven eagles were seen along the coast within a distance of less than one third of a mile, and it is reported that they are far more abundant in several other localities.

Almost all of the nests were placed in inaccessible positions, invariably in large spruce trees, but from elevated headlands it was possible to see that they contained eggs from the middle to the last of May. Newly hatched young were found on the 11th of June, and one scarcely able to fly appeared near the camp on the 8th of July. During this time the parents are active and extremely bold in the capture of prey, and the cries of pursuing gulls could be heard about the cliffs at distressingly frequent intervals. Their work of destruction in the fall is generally transferred to the larger islands or to the mainland, and it is claimed that when the food supply fails along the beaches, or birds and small mammals are too wary, a pair will hunt out a small deer in the open meadows, and after tearing out its eyes will buffet it with their wings until dazed and wearied it finally succumbs.

The eagles gather daily about the lakes on Forrester Island, and two partially submerged spruce logs are worn smooth where they have stood during the bathing process. During rare intervals when the rain has ceased to a sufficient extent to allow some of the smaller pools to drain, the bottom ooze is tracked in various directions and is occasionally fashioned into distinct wallows. These phenomena are familiar to the Indians, who claim that these birds

are very fond of "lake worms", evidently meaning the larvae of the caddis-fly, and just as a chicken dusts its feathers to rid itself of vermin, the eagle will wallow in the mud when the need is pressing.

2. **Falco peregrinus anatum.** Duck Hawk. The duck hawk on Forrester Island deserves to be called the king of birds. It reigns supreme, and neither the eagle nor the raven nor any other native bird can stand against its onslaughts. At least none do so during the nesting season. They are, however,



Fig 12. NEST OF BALD EAGLE ON FORRESTER ISLAND,
ALASKA

not a source of great disturbance as only four nests were located during the season of 1913. These with one exception were placed on inaccessible cliffs. The exception was likewise on the face of a high cliff, but was easy of approach from above, and when discovered on June 11th contained three young, downy white with a few definitive, brown feathers. What the original nest material (if any existed) was it is impossible to say as the surroundings within a radius of two feet were covered with the feathers of Ancient Murrelets,

and debris of varied description. Other murrelet remains were plentiful at many points in the nearby forest, and it is evident that this species is a powerful agent of destruction among the birds of this kind.

For a considerable time it was a puzzle to know how a bird of diurnal habits could capture one that flies by night. For example, how does the duck hawk or the eagle strike down the Ancient Murrelet or the Rhinoceros or Cassin Auklet? Once more the Indians are responsible for the statement that the first and last named species are captured only when they have been injured by striking against trees, and are caught in the early morning before they have recovered. This may sound somewhat mythical, but several of these birds were actually captured which had struck against unlighted tents, and it is by no means uncommon to hear them strike the boughs of trees during the night, and to find them fluttering about in the underbrush. There are good reasons for accepting the statement of several old men of the Haidah tribe that trees were relatively scarce on Forrester Island a hundred or more years ago. The night birds then flew without let or hindrance, but in recent times, when conditions have changed, they have not adjusted themselves to meet these conditions.

As to the Rhinoceros Auklets, they leave their homes in the early morning, usually at the break of day, but if the sky be thickly overcast or a heavy fog prevails the day's journey may be delayed for several hours, according to the Indians who used to capture them for food. If a man can take them under such circumstances it is evidently no difficult task for their older enemies to perform the same feat.

3. **Cryptoglaux acadica.** Sawwhet Owl. Although the natives report that they have never seen an owl of any description on Forrester Island, a Sawwhet was secured within a few feet of our tent on the evening of August 9.

4. **Selasphorus rufus.** Rufous Hummingbird. Throughout the summer this bird was in evidence in many parts of Forrester and the neighboring islands. One in particular, stationed near the camp, was under observation, but there were no evidences that it or the others nested.

5. **Empidonax difficilis difficilis.** Western Flycatcher. This bird undoubtedly breeds on Forrester Island as one family of fledglings, scarcely able to fly, was seen on one occasion. The adults are rather rare in most localities on the main island, though at least a dozen were seen in the neighborhood of the open glades on Lawrie Island, about half a mile to the north of Forrester.

6. **Corvus corax principalis.** Northern Raven. The men of the Haidah tribe who have visited Forrester Island summer and winter for many years are responsible for the statement that only a single pair of ravens remains there throughout the winter. If this is indeed an assured fact it is certain that they are joined by a very considerable company in the spring. By the middle of May there were certainly not less than two hundred individuals, possibly more, but as they forage widely it is difficult to make a just estimate of their numbers. As it was past the egg-laying season at the time of our arrival no serious attempt was made to discover their nests, and it is somewhat doubtful if they could have been found without the consumption of much time and patience, for these birds are as keen sighted as eagles and as sly as foxes. Several times they were seen carrying food to their young, but in every case they eluded pursuit, and the juveniles were not noted until late in July when

they were seen travelling about the beaches in company with one or both of the parents.

Although a sleep destroyer in the early morning the raven cannot be said to be a serious enemy of the birds. Generally speaking its food supply is found along the shore line, and it is not certainly known that they robbed a nest or killed a bird at any time during the summer.

7. **Corvus caurinus.** Northwestern Crow. Black in color and with a reputation of the same hue, the fish crow is an unmitigated nuisance. Scores of these birds find a nesting place on Forrester Island, and the worry they occasion among the cormorants, gulls and pigeon guillemots is almost as extended as their waking hours. Frequently they may be seen sneaking stealthily over the cliffs, occasionally picking up refuse material thrown up by the sea or picking at barnacles and mussels, but nearly as often they are on the lookout for eggs. In some cases these are punctured merely in a spirit of mischief as no attempt is made to devour the contents, but at other times the eggs and young are packed off and eaten at leisure. The Pigeon Guillemots are the chief sufferers apparently, as several nests under observation were robbed systematically and at the close of the season only one young bird was found.

8. **Loxia curvirostra minor.** American Crossbill. Several flocks of crossbills appeared on Forester Island about June 21, and remained throughout the summer, at least until the close of our stay on August 9. During that time they almost invariably remained among the cones at the tops of the tallest spruces, feeding with feverish activity to the accompaniment of a chorus of notes which strongly resembled a wireless telegraph instrument operating at a considerable distance. It is improbable that they nest on Forrester, though they certainly do so on Prince of Wales Island, as one young individual, scarcely able to fly, boarded a launch in the neighborhood of Hetta about the middle of June. They are also reported to breed on Dall Island.

9. **Passerculus sandwichensis sandwichensis.** Aleutian Savannah Sparrow. One specimen secured May 25, the only individual of the species seen.

10. **Junco oreganus oreganus.** Oregon Junco. Several juncos were seen at various times throughout the summer in the hills bordering the lake region in the central part of the island. A single nest, containing recently hatched young, was found on June 3 in the side of a small mound covered with moss and heather.

11. **Melospiza melodia rufina.** Rusty Song Sparrow. Song sparrows were usually in evidence among the salmon berry thickets along the north shore of Forrester Island, in several parts of Lawrie Island, and were relatively abundant on South Island. One female, in the first named locality, was seen carrying insects into the shrubbery, but the nest was never found.

12. **Passerella iliaca townsendi.** Townsend Fox Sparrow. This species of sparrow was the most abundant land bird in the region, being found from one end of Forrester Island to the other as well as on Lawrie and South islands. It was especially numerous in the vicinity of the camp where it fed at the boxes several of the fishermen provided for their feathered friends. Nests were also plentiful, principally in the roots of stumps and in crevices of the rocky cliffs. Judging from three pairs close to the tent, two broods are raised each year.

13. **Vermivora celata lutescens.** Lutescent Warbler. On several different days throughout the spring and summer Lutescent Warblers were seen feeding in the thickets of salmon berry at various points on the island. During the early part of the season especially these were watched for a considerable time for indications of nest building or the presence of young birds, but the signs were never conclusive, though it is altogether possible that they actually do breed in the Forrester Island group.

14. **Wilsonia pusilla pileolata.** Pileolated Warbler. On various occasions one or two Pileolated Warblers were seen in the dense thickets along the shore across the island from the camp, though there were no indications that they bred in the locality.

15. **Nannus hiemalis pacificus.** Western Winter Wren. These diminutive birds were almost as numerous as the Townsend Fox Sparrow, and were as widely distributed. No less than twenty nests were found throughout the spring and early summer located, in every instance, in cavities among the roots of upturned trees.

16. **Certhia familiaris occidentalis.** Tawny Creeper. These birds are comparatively rare on Forrester Island, as a few individuals only were seen during the summer. Among these were two immature birds that were doubtless hatched on the island though no nests were discovered.

17. **Sitta canadensis.** Red-breasted Nuthatch. A single individual of this species was seen on the side of a spruce stub in the latter part of May.

18. **Penthestes rufescens rufescens.** Chestnut-sided Chickadee. Small flocks of these birds were met with in various parts of the island from the first of June until August. There were no indications of pairing, however, or young birds or any proof that they nest on the island.

19. **Regulus satrapa olivaceus.** Western Golden-crowned Kinglet. This species is common throughout the main island. There are indications that it nests during the latter part of May and early June.

20. **Hylocichla ustulata ustulata.** Russet-backed Thrush. Thrushes were common, especially about the camp where several nests were found during the month of June.

21. **Planesticus migratorius caurinus.** Northwestern Robin. A few individuals were seen during the summer, but there was no evidence to show that they nested.

22. **Ixoreus naevius naevius.** Varied Thrush. Common throughout the main island. Several nests were found in June.

SEA BIRDS.—Forrester Island is fully as secure a haven for the dozen or so species of water birds, which dwell upon its shores, as for the land birds. Certain species are the prey of the duck hawk and the eagle, the fish crow carries off the eggs and young of those whose nests are exposed upon the cliffs, but the destruction is not especially serious, and on the other hand the food supply is abundant. Furthermore the wolf and fox, which on neighboring islands are responsible for the destruction of many species of birds, both land and marine, are absent on Forrester, and in many respects the habitat is indeed most satisfactory.

Only the birds that are actually known to nest on the island are described in the following list. The natives report a species of "duck" (their name for

almost every kind of water bird) which nests on South Island—a name I have given provisionally to the largest of the three islands bordering Forrester on the south. From their description it might be the Least Auklet, since it is reported to nest beneath masses of boulders on the beach, lays one white egg, and has the characteristic cry. Owing to continued stormy weather it was not possible to effect a landing until late in June, at which time no traces of these birds could be detected.

A pair of Harlequin Ducks was seen on several occasions in a little cove half a mile south of the camp. From their behavior it is fairly certain that they nested in the vicinity, though long continued search failed to disclose the whereabouts of the nest. White-winged Scoters, swimming in pairs near shore, were seen at various times, but there is no evidence that they nest on the island. Last year a pair of Old-squaw Ducks were reported to have nested on the shores of one of the highland lakes. No trace of the species was noted this past season.

The following species are normally found on the island, and nest there regularly.

1. ***Lunda cirrhata***. Tufted Puffin. This species is probably the most abundantly represented sea bird on Forrester Island. When resting on the water each individual has a sphere of influence, so to speak, being separated from its fellows by a distance of several feet. With a field glass this open rank formation can be followed for miles along the coast, and for hundreds of yards out to sea. It is impossible to count such an innumerable company, and guesses on the part of the fishermen ranged from ten thousand to two million. By carefully spacing off equal sized areas on a map and estimating the number of birds in a given district it was possible to arrive at a very general estimate of the total population. Such a method has its disadvantages, but it is safe to say that at least 70,000 of these birds were on Forrester Island during the past season.

For fearlessness, pluck and dash the Tufted Puffins have no equal on the island, and the maledictions and gaff hooks hurled at them during the fishing season were probably as numerous as the birds themselves. While their natural food consists almost wholly of sand launces, they are by no means averse to cleaning the bait from the fishermen's hooks. For hours at a time they will follow a rowboat, and rarely indeed is a fisherman able to sink a line below their diving depth, or slip it into the water without detection. Fortunately not all of the puffins are engaged in this thrifty method of gathering food, and the boatman is usually able to cross some other fisherman's path and switch the pest on to his trail.

On one occasion a puffin was stunned by an accurately aimed gaffhook and was hauled aboard. Upon recovering consciousness it was held by the feet and fed herring until the exasperated boatman terminated its career by wringing its neck. This is perhaps an extreme case, but it serves to illustrate the boldness of the species and to furnish a reason for the steady increase in numbers which the natives have observed during the past twenty years.

Eggs were in the burrows the third week in June; young appeared by the middle of July, possibly earlier.

2. ***Fratercula corniculata***. Horned Puffin. The Horned Puffin for some unknown reason is comparatively rare on Forrester Island. Conditions appear to be as favorable for its existence as for the Tufted Puffin, and yet it is prob-

able that not over two or three thousand made their homes on the island during the past season. In the afternoon especially they are wont to sit at the entrance of their burrows, and rowboat journeys and fairly accurate counts were made on several occasions. In most instances they form small colonies in the face of a cliff some distance from human habitation, and at all times appear to be at peace with their more numerous relatives.

Their food, nesting and other habits are essentially the same as those of the Tufted Puffin.

3. ***Cerorhinca monocerata*.** Rhinoceros Auklet. For many decades it



Fig. 13. ENTRANCE TO BURROW OF RHINOCEROS
AUKLET AT BASE OF SPRUCE

has been the custom of the Haidahs living on the southern half of Prince of Wales Island to abandon their homes in the springtime, and establish temporary camps on Dall Island. Here they fished, hunted or cruised in dugouts in search of sea otter until the Rhinoceros Auklet put in an appearance, usually in the latter part of April. By this sign they knew that on Forrester Island the nesting season was at hand not only for the auklet, but for the gulls and later the murre and cormorants, and accordingly they repaired to this summer resort for their annual egg and bird collecting holiday.

Generally speaking the Rhinoceros Auklet occupies burrows in the slop-

ing sides of the island from the shore line to a height of from 400 to 500 feet, their number and distribution depending upon the nature of the soil and the character of the surrounding vegetation. The most favorable nesting sites appear to be the dense spruce woods where the shadows are of such depth that ferns and underbrush find but scanty foothold, and the soil is soft and friable. In such localities over four hundred burrows have been counted in an area six hundred feet square, but where the salmon- and elder-berry are abundant, and ferns form a tangled mat, or rock outcrops are plentiful and the soil thin the nests are of less frequent occurrence or are absent altogether. While no

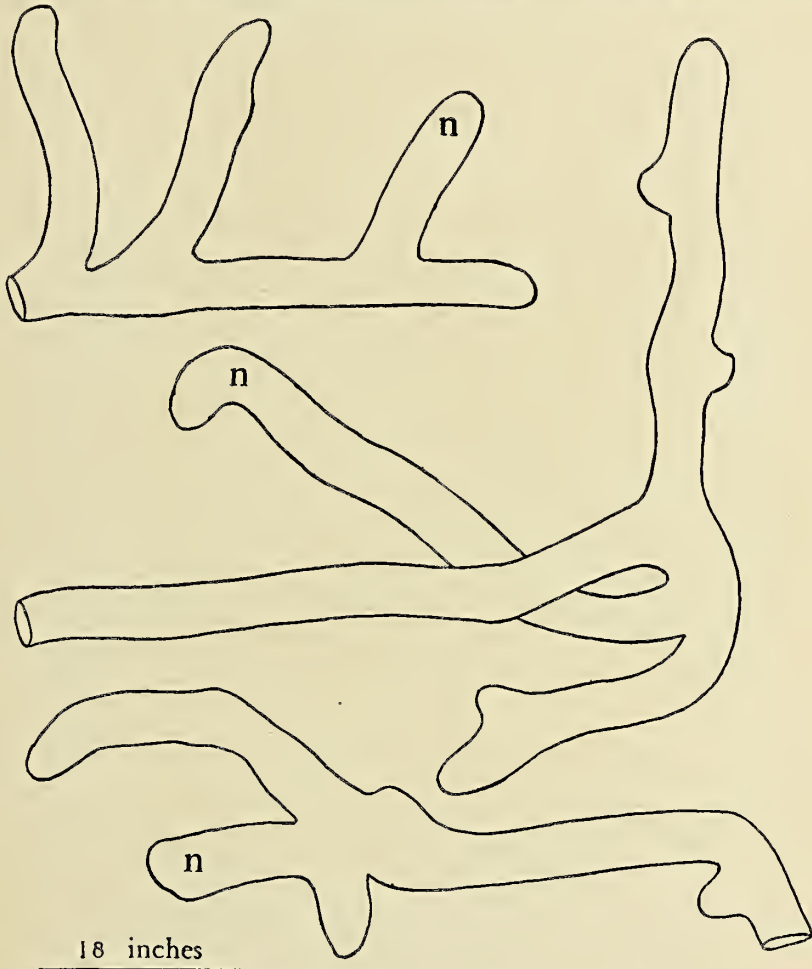


Fig. 14. DIAGRAMS OF RHINOCEROS AUKLET BURROWS

complete and accurate count is possible it is safe to say that not less than fifteen thousand pairs of these birds found a home on Forrester Island during the past season.

Judging from this year's observations the breeding season commences in the latter half of May. At this time the old burrows, which have caved in during the winter or have become clogged with debris brought in by mice, are given a thoroughgoing cleaning, and the accumulation of spruce needles and cones, decayed grass, moss, leaves, stems and earth scraped to the front of the

entrance forms a conspicuous mound in many instances. In some cases the tunnels have already been cleared to some extent by the Cassin Auklet and to a less degree by the Ancient Murrelet, but the relations of these birds appear to be undisturbed even when two species occupy the same home.

As a general thing the opening of the nest is about the base of stumps or trees or under logs, and only rarely does it occupy open ground away from the forest. As to the burrow, it is a highly variable structure, neglecting the fact that it is at least eight feet in length. In extreme instances it attains a length of fully twenty feet, and as indicated in the accompanying diagrams its configuration is subject to many variations. There is usually one main channel, rarely with two outlets, and from this there are one or more blind offshoots. In one of these the nest is frequently placed, but it is by no means a usual occurrence to find it close to the entrance as some of the Haidah men declare to be the case.

The composition of the nest depends upon the material at hand. Where spruce trees abound the building materials are largely small twigs; where salmonberry, moss and ferns are in the vicinity these are utilized, and in either case are fashioned into a shallow, saucer-shaped nest. The single egg, white with obscure lavender spots, is laid in June from the 1st to the 15th. Newly hatched young were found as early as the 27th, but the greater number hatch out during the first week in July. The period of incubation lasts about three weeks as far as can be determined from the data at hand, though it must certainly be somewhat more extended when the burrow is poorly drained, and the nest a soggy mass. On August 6 several burrows were opened and found to be empty, and about the same time the fishermen reported having seen young birds, accompanied by one or both parents, some distance out at sea.

The duty of incubation rests upon both parents, as individuals of either sex have been found in the burrows during the day. During this time the mate is fishing at sea, and returns shortly before dark, or more accurately about 10 P. M. The day shift now puts to sea to return in the early morning hours.

The natives are unanimous in declaring that they now know of no other nesting site of the Rhinoceros Auklet in southeastern Alaska. This being the case it is evident that they frequently fly considerable distances in search of food. On rare occasions they were reported by fishermen operating upwards of a mile from shore, but in the great majority of cases they sought more open water at some distance from land, such as the channel between Forrester and Dall Islands. A marked exception to this rule may be witnessed throughout the summer on the eastern side of Dall Island in Kaigani and Tlivak straits. Here the tide sets strongly, especially in the region of the narrows of Skookum Chuck at the north end of Dall Island, and with an abundance of floating organisms serving as fish food the conditions are most favorable not only for auklets but for several other water birds such as gulls, ancient and marbled murrelets, pigeon guillemots and eormorants. In order to reach this locality the Rhinoceros Auklet makes a round trip journey of at least sixty miles if it flies directly over Dall Island. This, however, is doubtful as flocks have been seen at nightfall coming down the straits on the east side of Dall, and, after rounding the southern end, their course is doubtless a bee line for home. Under such circumstances it requires a completed journey of fully one hundred and twenty miles to bring them to the feeding grounds and back again. Whatever

their route it is certain that they are most rapid flyers, and in the dim evening and morning light it is a difficult feat to follow their bullet-like flight against the sky. If the day be foggy or dark the usual early morning departure may be delayed for an hour or so. Under such circumstances they rest in front of their burrows, or wander about the neighborhood, uttering their curious nasal cry of four short notes rapidly repeated.

In former times the Rhinoceros Auklet was far more numerous than it is at the present time, according to the reports of the Indians. As late as fifty years ago many of the slopes now untenanted afforded nesting sites for these and other birds, and the hills now occupied had a far greater population than one finds today. In those earlier times the sky was literally darkened as they put out to sea, and the sound of their cries was a veritable babel. The diminution might naturally be ascribed to the activity of the natives, who relish this species above all others, but the natives themselves meet such a claim with the evidence of many scores of years when, with a much larger tribe than at



Fig. 15. EGG AND NEST OF RHINOCEROS AUKLET WITH SIDE OF BURROW CUT AWAY

present, they gathered eggs and birds in vastly greater numbers without any appreciable decline in the bird colony. Their explanation rests solely upon the belief that the decrease is due entirely to the rank growth of underbrush and ferns which form a tangled mat too dense to permit of ready flight to and from the burrows. In former times, even within the memory of some of the older men of the tribe, the country was much more open; and it is certainly a readily observed fact that this species avoids the thickets and seeks out more open ground. Occasional nests are found in salmon berry patches, but well worn runways invariably lead into the open.

The food of the Rhinoceros Auklet, whether young or old, consists wholly of sand launces, according to the reports of the natives, and an examination of a few stomachs supports their claim. The young birds are fully developed and able to fly before leaving the nest.

4. *Ptychoramphus aleuticus*. Cassin Auklet. Although several attempts were made to distinguish the burrows of the Cassin Auklet from those of the

Ancient Murrelet there is apparently no external mark of identification. The natives state that Cassin Auklet arrives on Forrester Island about March 1, and as it commences nesting earlier than the Ancient Murrelet it would be possible at that time to accurately locate and estimate the number of nests. In the latter part of May (the 20th) when their burrows were first found by us the eggs were in an advanced stage of incubation, and the murrelets had long since commenced the cleaning of their burrows. It was accordingly impossible to determine the exact numbers of the two species. It can be said, however, that the Cassin Auklet has been found to occupy several sites from the sea level to a height of five hundred feet, and the presence of egg shell fragments in many places indicates their general distribution over the island and in small numbers on Lawrie and South islands. As in the case of the Ancient Murrelet, the openings of the burrows are located about the roots of trees, or beneath partially buried logs or stones. The tunnel itself ranges from two to four feet in length, and is usually only sparingly branched. Whether they occupy the same home season after season is not known. It is certain, however, that several of the tunnels have been occupied at one time by mice, as is evidenced by accumulations of gnawed cones in some of the lateral galleries, or in the material scraped from the main canal and accumulated about the entrance.

On Forrester Island the duties of nest building are no more onerous than characterizes the species elsewhere. A few twigs of the Sitka spruce together with old or mouse eaten cones and occasional fragments of moss appear to be all that is necessary. The length of the incubation period was not determined, though Captain John (a remarkably keen and accurate naturalist of the Haidah tribe) says that it lasts "about two weeks". Fully three weeks more are required to bring the fledgling to the time of departure from the nest. During the time of incubation, the female occupied the burrow in five cases at least, and the Indians claim that she is fed during the night by the male and never leaves the nest until the young is several days old. The food of the young and of the adults as well, was found to consist of copepods and an undetermined species of shrimp or amphipod.

The Haidah name of the Cassin Auklet is "hatzah", referring to their nocturnal note. In ancient times this species figured largely in the native's bill of fare, and large numbers were annually taken by means of snares or were attracted by bonfires and subsequently knocked down. The fishermen reported on several occasions that in the early morning these birds had struck their tents, and in a stunned condition were readily taken. In conclusion it may be said that while the species is widely distributed throughout the island there is no reason to believe that they are numerous. They are met with occasionally out at sea, but their numbers are relatively few.

5. *Synthliboramphus antiquus*. Ancient Murrelet. Of the three nocturnal burrow-inhabiting birds nesting on the main island the Ancient Murrelet appears to be the most abundant. In many places the hillsides are riddled with their galleries from the shore line to a height of from four to five hundred feet. Their range is therefore identical with that of the Cassin Auklet, but after fairly extensive observations it is safe to say that the murrelet outnumbered the auklet by at least twenty to one. On our arrival (May 16) the burrows gave evidence of recent cleaning since loose masses of spruce cones, needles and earth formed a fresh looking mound in front of the entrance. As

in the case of the Cassin Auklet, the burrows appear to have served originally as the homes of mice, or at all events to have housed them during the winter; for small heaps of gnawed cones were frequently found in some of the lateral branches of the tunnel.

The opening of the burrow is situated among the roots of the spruce and under logs or more rarely beneath stones or in crevices among the rocks. The tunnel pursues an irregular course from the entrance for a distance ranging from eighteen inches to four feet, with from one to three short, lateral chambers leading off from the main trunk in the case of the larger burrows. This season the period of egg-laying probably commenced early in May, though the greater number presumably lay about the 20th. At all events newly hatched chicks were seen as early as May 29, and were very abundant during the second week in June. After this date the numbers rapidly diminished, though young birds were seen as late as July 1. It is claimed that the duties of incubation are performed by the female, and an examination of four individuals dug out of the nest showed this to be the case. The diurnal absentees put in an appearance shortly after nightfall, or more accurately from about 11 P. M. until midnight. An outgoing stream commences during the latter part of this period and continues until about 2 A. M. Very few return after 3 A. M.

The journey of the young to the sea is one of the most interesting sights on the island, and by the aid of a lantern was witnessed on several occasions. The pilgrimage is made during the night within a day or two after hatching, and is evidently initiated by one or both of the parents who take up a position on the sea not far from the shore. Here, about midnight, they commence a chorus of calls resembling the chirp of an English sparrow with the tremulo stop open, and in response the young, beautiful, black and white creatures as active as young quails, soon pour in a living flood down the hillsides. Falling over roots, scrambling through the brush or sprawling headlong over the rocks, they race at a surprising rate of speed drawn by the all-compelling instinct to reach the sea. They may be temporarily attracted by the lantern's light, and flutter aimlessly about one's feet; but sooner or later they heed the calls and once more plunge down the slopes. Almost every night during these migrations the surf was pounding violently on the rocky beaches, and many times one could see the young swept off the cliffs, and after struggling a moment in the waves they disappeared from sight and seemed doomed to destruction. Notes made at this time run as follows: "The tremendous violence of the breakers, churned to foam on the low yet precipitous cliffs, have destroyed birds of larger size and smashed boats to splinters. It is therefore altogether probable that the life of many of these delicate and diminutive birds is snuffed out during each migration."

To test the correctness of this observation a young murrelet, which came down the slopes early one evening, was liberated on the beach close to the dashing surf. Without a moment's hesitation, and without the stimulus of a parent's call it plunged boldly into the water, poised a moment on the summit of a great foam-crested wave, and dived with surprising speed and accuracy to reappear ten seconds later as many feet at sea. A momentary appearance, another dive and still another carried it beyond the swirl of the surf, and, swimming rapidly and paddling across patches of kelp always in a bee line, it soon disappeared from view. It is evident therefore that the last sentence of the preceding paragraph is in need of revision.

A trip to sea during the daytime in the first half of June will serve to show many young birds in company with one or both parents, and there is thus no doubt regarding the ability of the parents to recognize their offspring though the night be dark and tempestuous. On several occasions fishermen reported finding the young too weary to avoid their boats during stress of weather, and it is altogether possible that many are gradually worn out and drowned, but although this season was unusually stormy many young birds were seen during July that had weathered all the gales and were abundantly able to care for themselves.

6. *Larus glaucescens*. Glaucous-winged Gull. While gulls are abundant on and about Forrester Island they are all representatives of a single species, the glaucous-winged. Several natives are responsible for the statement that during the late fall the great majority of this company leave for the larger islands skirting the coast, where they find on the clam and mussel beds a larger food supply than is present on Forrester. Be this as it may, it is certain that at the time of our arrival (May 16) they were present in large numbers, and there was no material increase throughout the summer season. The adults early congregated on the rocky islets and precipitous cliffs which later in the season formed their nesting sites, and from such bases of operations they made frequent sallies into the herring schools. Associated with them were numerous immature individuals, but the great majority of this last named class flocked by themselves and occupied roosting places from one end of the island to the other. A favorite feeding ground was the little bight immediately in front of the camp, where they gathered daily and filled themselves to the point of repletion on the herring and remains of salmon thrown out on the beach.

The first signs of nest building were noticed on the 25th of May, and by the 29th all were gathering grass and weeds. On June 2nd several nests contained one egg, and a very considerable number of birds had commenced the work of incubation by the 10th. In the latter part of the month several nests were found with young, of which the majority were gone by the 1st of August.

For some unknown reason a surprisingly small number of gulls nested on Forrester Island although large flocks were visible at all times. The hand trollers made the claim that the noise and odor of the gasboats were responsible for their departure from the normal, but the fact that they showed little fear of man or of his boats in the harbor militates against such a theory. The eagles and probably the crows destroyed some fledglings, as they doubtless have done for countless generations, but this scarcely appears to amount to a sufficient cause. It is possible that some of the fishermen felt the need of relief from the usual diet of beans and bacon and helped themselves to eggs though no such offense was actually noted.

In this connection it may be added that guarding Forrester Island against the activity of poachers is impossible with any guard of less than a dozen men. Considering the fact that the fishermen leave for the fishing grounds as early as three in the morning and return as late as nine in the evening, and during this period are scattered from one end of the island to the other, it is obvious that where the determination is strong nest robbing is comparatively easy. However it is not so readily possible to ship away the great quantity of eggs which were annually collected in former times, though at least one small shipment was made this past year as was evidenced by a stream of yolk

gently oozing from a case reposing on the deck of one of the outgoing fish buyer's boats.

7. **Cepphus columba**. Pigeon Guillemot. The Pigeon Guillemot was represented on Forrester and the adjacent islands by approximately five hundred individuals. Almost every headland was the home of a small colony, and yet their nests were surprisingly rare. A small community a short distance south of the camp was kept under observation, and judging from its experience it is probable that they suffer greatly from the depredations of the fish crow. Out of six pairs only one succeeded in hatching a brood, and cracked or punctured shells indicated the culprit. Fish crows were seen on several occasions skulking about the cliffs after several cormorants had been disturbed and left their nests, and in one instance an egg was carried off and dropped though not eaten. The natives report that the fish crow destroys the eggs of



Fig. 16. NORTH SHORE OF FORRESTER ISLAND; NESTING PLACE OF THE GLACIOUS-WINGED GULL AND PELAGIC CORMORANT

every species of bird whose nests are exposed, and they declare it to be fully as great a pest as the eagle.

The first eggs were seen during the third week in June, and the period of incubation appears to last about three weeks.

8. **Uria troille californica**. California Murre. It was the general belief of the fishermen that the murre outnumbers every other species of bird on Forrester Island. This opinion appears to rest largely upon the fact that where they roost on the cliffs or float on the sea they form dense flocks often of great size. Nevertheless their nesting places are confined to a few sharply defined areas, and a careful estimate renders it probable they do not exceed fifty thousand individuals. The full population was in evidence by the last of May, though the nesting season did not commence until the latter part of July. Their food consisted almost wholly of sand launces, varied by an occasional shrimp or amphipod.

9. *Oceanodroma leucorhoa*. Leach Petrel. Leach's Petrel is said by the natives to nest only on South Island, and this appears to be the case as no evidence of their dwelling places was detected during numerous excursions over Forrester and Lawrie islands. On the southern island, however, their name is legion. Almost as soon as a landing was made small openings were noticed in the moss covering the rocks, and while these appeared surprisingly similar to those made by mice a minute's work was all that was necessary to disclose their true character. Others were half hidden in the grass and among the underbrush, and from the central valley to the summits of both hills the soil was riddled with holes. In various places from four to seven were counted in a space a yard square, and one must tread cautiously indeed to escape breaking through the burrows at every step. At the time of the first landing, June 30, the birds living in the comparatively dry soil covering the rocks had completed the clearing of the burrows and the building of the nests, and in most



Fig. 17. BURROWS OF THE LEACH PETREL ON FORRESTER ISLAND

instances had deposited the single egg characteristic of the genus. In the underbrush the burrows had been cleared, the refuse material had been dragged to the front of the entrance, and the nests had been completed in many instances. However the breeding season is not sharply defined since a few fresh eggs were found on July 19 and 20.

The burrow leads inward from the entrance for varying distances, two feet being about the average length. In extreme cases tunnels have been opened having a length of fully six feet, and from two to five birds occupy this in common, each nest being placed in one of the lateral offshoots from the main trunk. Such extensive residences have evidently been vacated by Cassin Auklets as one young bird of this species was found in a burrow with five petrels. The nest is a flat, thin pad composed of fragments of grass, bits of moss and small twigs of spruce or salmon berry. As is well known the egg is

white in color with a faint ring of red spots about the larger end, though this last named character is not invariable.

The exact period of incubation was not determined, though it is apparently about two weeks. As previously mentioned the first eggs were laid about June 30, and chicks fully five days old were found on the 19th of July. The duty of incubation rests on either parent as both males and females were found during the day. The prevalence of storms and rough weather made it necessary to confine our observations to the day-light hours so that no first-hand information can be given regarding the return of the absent mate and the feeding of the young, but the natives are agreed that the birds change places on the nest after nightfall, and after an interval of about four hours the day's shift takes place. The flight of the parent birds upon leaving home is always to the westward. In other words they do not occur in the neighborhood of the mainland or the islands along the coast, but hunt their food on the high seas far from any body of land.

An examination of the stomach contents of three individuals showed that they had been feeding upon some species of crustacean, apparently a shrimp, though this food product had been reduced to a pulp and so greatly digested that a few particles of chitin were alone recognizable. The resulting semi-fluid, highly oily substance, having the characteristic musky odor of the bird and burrow, is vomited out when the bird is disturbed, apparently for purposes of defense.

It is difficult to estimate the number of these birds nesting on South Island. The Indians sometimes call the place "the basket" since it is so full of holes, but when asked regarding the number of holes or birds their guesses ranged from ten thousand to two hundred and fifty thousand. In a rough way the island was measured into a number of plots and in each of these the number of nests was estimated. The result totalled not far from seventy-five thousand, or one hundred and fifty thousand birds, and this is certainly a conservative estimate.

10. *Oceanodroma furcata*. Forked-tailed Petrel. The Fork-tailed Petrel is likewise confined to South Island, where it nests in small numbers when compared with the Leach Petrel. Following the directions of Captain John their nests were found on the summit of the heights adjacent to the central ravine, but owing to the fact that their burrows are in no manner different from those of the Leach Petrel, among which they are placed, and that fully twenty-five of these last named birds must be dug out in order to find one forked-tailed, no extended search was made for this species. Two dead individuals were picked up at the entrance of uncompleted burrows, but there is no practicable method whereby the limits of the colony can be accurately defined.

The density of the growth of spruce on the summit results in fairly clear ground, and great numbers of burrows occur in the soft soil in the open places or under logs or about the roots of trees. As indicated above there is no token whereby one can distinguish the homes of the forked-tailed (though one nest was located by one of the characteristic light colored feathers in front of the entrance) and it is accordingly impossible to accurately estimate the population of the colony. It is safe to conclude with the natives that the species is confined to high ground, and that not more than one burrow out of twenty-five

or thirty is the home of the forked-tailed, but beyond this point it is useless to speculate.

Not only is there no external mark whereby the burrow of the Forked-tailed Petrel may be distinguished, but the close resemblance between the home of this bird and that of Leach's extends to the burrow, the nest and even to the egg. The only certain method of distinguishing the eggs and young is to find them with the parent. Furthermore the native's observations regarding both species show them to have the same general habits. In the case of the forked-tailed one of the parents remains out on the open ocean during the day. It returns about nightfall to relieve its mate, and again sets out to sea in the early morning. According to the natives the food consists of "crabs", probably meaning shrimps.

11. **Haematopus bachmani.** Black Oystercatcher. Probably fifty pairs of oystercatchers nested on the shores of Forrester, Lawrie and South islands, during the season of 1913. The few nests actually discovered were situated



Fig. 18. NEST OF BLACK OYSTERCATCHER ON FORRESTER ISLAND, SOUTHEASTERN ALASKA

on rock masses a few feet above the high tide mark, and contained one or two eggs each. The building material in every instance consisted of small fragments of stones, ranging in amount from a couple of ounces to half a pound. The first eggs were noted on June 18, and young birds were seen on July 10.

The precocial fledglings very early accompanied their parents on short journeys about the cliffs, and within a week after hatching were observed peeking at limpets, although it is highly probable that for several days thereafter they depended on the old birds for the greater part of their food supply. During this time the young resemble diminutive ostriches with thick-set legs, big feet and fluffy plumage, which, it may be added, harmonizes to a high degree with the surroundings. Furthermore they have the same habit of hiding the head when it is not possible to conceal the entire body beneath a stone. From the stomach contents of adults, and judging by the shells scattered about the nests, the food of the black oystercatcher consists wholly of limpets.

12. **Phalacrocorax pelagicus pelagicus**. Pelagic Cormorant. This species is fairly common along the shores of Forrester Island and to a less extent occurs on both Lawrie and South islands. Nest building commenced during the first week in June and eggs were in evidence by the 26th. Young birds were in the nests twenty-four days later though it is possible that the period of incubation is somewhat shorter than this. Several times at sea these birds were seen feeding on herring.

Stanford University, California, October 23, 1914.

BIRDS OF THE BOSTON MOUNTAINS, ARKANSAS

By AUSTIN PAUL SMITH

THE FOLLOWING list consists of birds that were met with by the writer during an eighteen months residence in the region; or of species reported to him as occurring within the area hereafter specified.

The Boston Mountains comprise a range of rough hills covering the greater part of several counties in northwestern Arkansas and extending for a short distance into Oklahoma. Essentially a part of the Ozark plateau, this group constitutes the highest land within the state, with exception of a few isolated peaks of the Ouachita Mountains, that lie south of the Arkansas River. The Boston Mountains reach an altitude of 2200 feet, in the vicinity of Winslow, Arkansas.

At least ninety percent of the area of these hills is forested; but much of it is second growth timber. Such as remains of the primitive forest is largely confined to ravines and rough hillsides; but, wherever found, it contains most of the species of deciduous arborescent growth, general to the Carolinian zone within the Mississippi watershed. On areas that have been "cut-over", and allowed to revert to forest, the principal trees are oaks of several species, including *Quercus velutina*, *alba*, *rubra*, and *coccinea*; hickory, mostly *H. glabra*; chinquapin (*Castanea pumila*); sour gum (*Nyssa sylvatica*); and persimmon (*Diospyros virginica*). Wherever clearings have been made and abandoned, a vigorous growth of sassafras now exists. Sweet gum (*Liquidamber styraciflua*), sycamore (*Platanus occidentalis*), and elm (*Ulmus americana*) are usually found in the immediate vicinity of streams. The undergrowth of the larger ravines is largely, often entirely, composed of indian currant (*Symphoricarpos vulgaris*).

The geographical area of this article is confined to a radius of ten miles of Winslow, and within the limits of Washington county, unless otherwise stated; also at an altitude of 1800 feet, or over.

I have found A. H. Howell's *Birds of Arkansas* (Biological Survey, Bulletin no. 38) of great assistance in preparing this list, it being the only publication that has yet appeared relative to the avifauna of that state. Acknowledgment is also due the Bureau of Biological Survey for the identification of several of the forms included herewith.

Anas platyrhynchos. Mallard. A flock of eight birds, closely bunched, and not more than fifty feet overhead, passed November 23, 1913. In 1914, three birds were noted as early as September 1.

Branta canadensis canadensis. Canada Goose. A flock of about forty birds, headed due south, was seen on October 11, 1913. The vernal transit in 1914 covered a rather extended period, flocks being observed from March 16 to April 15. All passed flying very low, which seemed to be a general rule with migrating birds crossing the range.

Olor columbianus. Whistling Swan. A solitary bird killed during the winter of 1912-13 on Frog Creek, near Porter, Crawford county, was probably of this species.

Herodias egretta. Egret. A large white "crane" was frequently observed by hunters along Frog Creek, during the summer of 1912; but it is not known to have been killed.

Butorides virescens virescens. Green Heron. A rather common summer visitant in suitable situations about the base of the mountains, but it is only occasionally found above 1800 feet.

Fulica americana. Coot. About sundown, October 11, 1913, a large bird was seen to alight in a field, and to then run rapidly through the tall grass. On being secured, it proved to be a mudhen. The nearest pool or pond was at least eight miles distant.

Oxyechus vociferus vociferus. Killdeer. The region is poorly suited to this species. Several birds, identified by their call, were seen flying overhead March 25, 1914, and again on the following day.

Colinus virginianus virginianus. Bobwhite. Resident, but in the higher part of the range of very localized distribution. The only covey that I could discover, made its headquarters in a 25-acre apple orchard on the farm where I resided. Here they found a bountiful food supply, with few enemies. However, their numbers seemed to remain stationary during my stay. They were very fond of the seed of green foxtail grass (*Setaria viridis*) which grew abundantly in the orchard; and of the berries of the sour gum, growing nearby. These constituted the principal items of the fall food supply. The last brood appeared about September 1, and after that date their note was rarely heard.

Meleagris gallopavo silvestris. Wild Turkey. A very few yet linger in the more inaccessible ravines; but the only definite record I could secure during my stay, was of a flock of five seen by a farmer near Frog Creek, in Crawford county, in the early part of December, 1913.

Zenaidura macroura marginella. Western Mourning Dove. Occasionally seen during the spring and summer months, or from April 1 to August 28. Only once were as many as five birds noted in company, single individuals being the rule.

Cathartes aura septentrionalis. Turkey Vulture. Present most of the year, retiring about December 1, to below 1500 feet; but reascending toward the end of February. A few could be noted almost daily; but to find any number in company, was unusual.

Elanoides forficatus. Swallow-tailed Kite. No doubt this bird formerly was a common transient; but during the last few years it has been seldom seen. The only record that I can recall during my stay in the mountains, was that of a single bird, observed by a farmer near Winslow, on October 8, 1913. Old residents were well acquainted with it, and described it to me minutely. They spoke of often seeing several birds together, which they took to be the female adult teaching her young the aerial manoeuvres for which this species is famed.

Circus hudsonius. Marsh Hawk. On the top of one of the highest hills of the range there was a clearing of about fifteen acres surrounded by timber. It was over this field that most of the individuals recorded were seen. Appearing in fall by October 7, departing before the winter months began, they reappeared in spring as early as March 10.

Accipiter velox. Sharp-shinned Hawk. Not as numerous as at lower altitudes. Seemed to occur only as a transient, although a single bird was seen July 24, 1913. April and October were the months in which nearly every record was made. In the last named month they appeared by the 2nd.

Accipiter cooperi. Cooper Hawk. A fairly common resident; most numerous during the warmer months. The proximity of the forest about nearly every farmhouse insures a great degree of immunity to this hawk in its frequent raids on poultry. The drought during the summer of 1914 caused most of the mountain streams to dry up. Along the course of one of these brooklets I flushed, on several occasions, this hawk in the act of feeding upon minnows in the desiccating pools.

Buteo borealis borealis. Red-tailed Hawk. Occurring principally as a fall and winter visitant. After November 15, and throughout the winter months, it proved to be the commonest hawk. It is my opinion that, although a larger bird than the Red-shouldered, it does not as a rule soar as high in hunting. An adult bird taken January 3 proved typical of this form.

Buteo lineatus lineatus. Red-shouldered Hawk. Although Howell states (*Birds of Arkansas*), that he did not meet with this species in the mountainous sections of the state, I found it to be the most abundant, and, with the Cooper, the only common hawk during the warmer months. It apparently does not winter, at least near the top of the range, as I found none after November. In spring it appeared during the first week in April. Fully grown young were on the wing June 30.

Buteo swainsoni. Swainson Hawk. An adult of this species alighted in a tree not more than 35 feet overhead, in a woodland through which I was walking, October 1, 1914, allowing of a close although brief scrutiny of a bird that I have been long acquainted with in the western states. Unfortunately, before I could swing my gun into position, it had flown away. It is, I believe, the first record for Arkansas.

Buteo platypterus platypterus. Broad-winged Hawk. While I found this hawk only as a transient, it may occur as a summer resident, as it has been reported at that season from several localities within the state. I found it fairly common during May, and again in September; in the latter month it appeared by the 17th. I found it only in heavy timber, usually perched on dead top-limbs of large forest trees. All specimens taken had the stomachs empty.

Aquila chrysaetos. Golden Eagle. The first "norther" in the fall of 1913 arrived October 18, bringing with it snow and freezing temperature. On the following day a farmer living about four miles south of Winslow saw a goose belonging to him attacked and killed by a great bird, which he was able to frighten away before it began to devour its quarry. The man surmised that the bird would return, and set a steel trap nearby, baited with the goose. And, sure enough, on reaching his barnyard next morning he found the bird entrapped, although held only by a single toe. This individual came into my possession and proved to be a nearly adult Golden Eagle. It constitutes the first definite record for the state.

Haliaeetus leucocephalus leucocephalus. Bald Eagle. Many reports of eagles seen, came to me during my stay, and I, myself, observed it twice—on May 6, and September 29, 1914, in both instances adults soaring overhead. The bird seen on the first date was being vigorously attacked by a Red-shouldered Hawk, though this appeared to cause little worry to "our emblem".

Falco columbarius columbarius. Pigeon Hawk. Rarely noted; the only definite date I can give was of an individual seen flying low over a field, September 22, 1913.

Falco sparverius sparverius. Sparrow Hawk. Has been reported as a common resident from many localities in the state. Nevertheless, I rarely found it within the area of which I treat. Seen several times during May and June, 1913; again in January and August, 1914.

Strix varia varia. Barred Owl. While frequently heard, it was seldom seen. An adult shot January 10, 1914, as it flew from a hollow stub, proves to be typical of the northern form, being of large size, and with the feathering on the tarsi extending almost to the toes. It definitely proves the extension of the range of this form into the northern part of the state.

Otus asio asio. Screech Owl. This bird, termed "Seriteh Owl", or simply "Seriteh", by the mountaineers, did not appear to be as numerous as either of its larger relatives, if one be allowed to estimate numbers chiefly by ear. As often heard at the very top of the range, as elsewhere.

Bubo virginianus virginianus. Great Horned Owl. Among the shelving rock slopes of the deeper ravines, dwell in abundance wood-rats (*Neotoma*). It is in the vicinity of these ravines that most of the Horned Owls of the mountains were to be found, as they preyed largely on this rodent. I considered it to be the commonest owl.

Coccyzus americanus americanus. Yellow-billed Cuckoo. Common spring and summer visitant; well distributed, and found to the summit of the highest hills. Arriving early in May (May 2, 1914), the southward movement began as early as September 1, but immature birds lingered until October 2. The year 1914 was a locust (*Cicada septendecim*) year in the region, and during the period these insects were present, they formed the principal food item of this bird.

Coccyzus erythrophthalmus. Black-billed Cuckoo. I doubt whether the species breeds in the mountains. Two were found May 22, 1914, among dense growth margining a stream; and an immature bird was taken September 17, of the same year, on the top of one of the highest hills of the range. These records would suggest its occurrence as a transient only.

Ceryle alcyon alcyon. Belted Kingfisher. Few of the streams heading in these hills attain sufficient volume above 1800 feet, to persist through the dry spells, so kingfishers seldom seek them. Twice only did I find it: once on September 23, 1914; again next day, but along a different stream.

Dryobates villosus villosus. Hairy Woodpecker. About as numerous as the Downy; possibly more frequently seen during cold weather than at other times. All birds examined by the Biological Survey were returned labeled *villosus*, although this must be near to the southern limit of its breeding range within the state.

Dryobates pubescens medianus. Downy Woodpecker. This proved to be the form found breeding. Abundant throughout the year. During the summer of 1913 an individual was observed frequenting a sweet-corn patch for several

successive days, hunting up and down the rows with regularity and searching the ears for the corn-maggot, so destructive at that time.

Sphyrapicus varius varius. Yellow-bellied Sapsucker. Arrived about the last week in October, and during the balance of the year was fairly common. They consumed quantities of dogwood (*Cynoxylon floridus*) berries in that period. Immature birds were found to outnumber the adults ten to one. Some of the call notes of the sapsucker much resemble those of various hawks.

Phloeotomus pileatus pileatus. Pileated Woodpecker. A characteristic bird of the region. Fairly common resident, except during the winter months when the majority seek lower altitudes. As few of the clearings in these mountains were of large extent, and heavy timber nearly always at hand, the birds were frequently seen to venture out into a field to feed upon ants and other insects harbored in decaying stumps. Normally rather difficult of approach, I have at times been within a few dozen feet of them. On one occasion firing several times into a tree to secure some small birds, I was surprised a little later to find that a Pileated had been clinging to the trunk during the entire bombardment. Examples sent to the Biological survey proved that the southern form extends into the hill country.

Melanerpes erythrocephalus. Red-headed Woodpecker. This bird does not seem to breed in the higher parts of the range; indeed it was present all told, not over two months in the year. About the last week in April small numbers were observed, mostly in flight. Again about the first of September it arrived, and was abundant for a month or six weeks, during which period it kept largely to oak woodland, feeding much on acorns and chinquapins. At least 80 percent of the birds seen during the autumn sojourn were immatures.

Centurus carolinus. Red-bellied Woodpecker. A resident, uncommon in the spring and early summer; fairly numerous during the balance of the year. Birds of the year, beginning to acquire the red nuchal feathers, were noted July 25.

Colaptes auratus luteus. Northern Flicker. Another species, normally within its breeding range, that was not seen during the spring and early summer. In the fall it appeared suddenly in flocks after the middle of September; and during the following two months great numbers ranged through the woodlands. Most of their number withdrew in December. The few that wintered kept closely to the deeper ravines, where they were assured of a plentiful supply of dogwood berries.

Antrostomus vociferus vociferus. Whippoorwill. Arrived after the middle of May (May 21, 1914), and was occasionally heard for a month or so thereafter.

Chordeiles virginianus virginianus. Nighthawk. Much more numerous than the preceding. Arrived about April 28, remaining until late into September. The southward movement, however, was apparent at a much earlier date, migrants from the north appearing in large flocks in August.

Chaetura pelagica. Chimney Swift. The earliest arrivals were recorded April 17. It was found to be a common summer visitant, remaining until October 3, or later.

Archilochus colubris. Ruby-throated Hummingbird. The arrival of the "ruby-throat" and the blossoming of the dwarf buckeye (*Aesculus parviflora*) were found to be coincident. For it is upon the flowers of this shrub that the ruby-throat finds most of its subsistence for the first two weeks after arrival.

Thereafter there were flowers of many kinds in abundance. In the early days of summer the beautiful *Pentstemon tubiflorus* comes into flower, and although pure white, proved a great attraction to the hummingbird. As midsummer arrived and flowering plants grew scarce, the hummingbirds resorted to the heavier woodland, hunting among the leaves, and, if I am not mistaken, feeding often on the honeydew. A female was noted on June 13, putting the finishing touches to her nest. The species does not depart until the first week in October.

Tyrannus tyrannus. Kingbird. Entirely a transient, as considered within the scope of this article. Several were seen May 13, 1914; and on August 22, 1913, I found three birds in heavy woodland.

Myiarchus crinitus. Crested Flycatcher. Not more than three or four pairs were noted during either of the two years spent in the region. It is one of the species that is rather tardy in completing the moult, specimens taken as late as August 28, or just before their departure southward, being in a very ragged state. Arrived April 30, in 1914.

Sayornis phoebe. Phoebe. Present most of the year; or from March 16, to November 12, inclusive. During the nesting period it was of course confined to the vicinity of streams; otherwise of general dispersion. Nest-building well advanced by March 31.

Nuttallornis borealis. Olive-sided Flycatcher. Found to be a regular, although rather uncommon, transient. Four were noted perched in high trees bordering a stream, May 16, 1914; a week later a flock of five was observed. A single bird was seen August 25, 1913. In 1914 a southbound individual was found September 18, as a companion of a Pewee, perching on the dead top of a tall forest tree.

Myiochanes virens. Wood Pewee. Every few acres of woodland was inhabited by either a pair of pewees, or of Acadian Flycatchers. The pewees were partial to the dry hillsides, while the latter were mostly restricted to densely wooded draws, or to streamsides, their ranges rarely overlapping during the period of nesting activity. In 1914 the Pewee arrived April 29, and remained until September 29. A bird of the year taken on the last named date still retained some of the juvenile feathering on the crown. An extensive flight of this species occurred September 18, 1914, single trees with a dozen or more birds perched on them, were observed during the early morning hours.

Empidonax flaviventris. Yellow-bellied Flycatcher. A regular transient, passing through in spring after the middle of May (16th to 22nd, in 1914). The southward movement extended from September 1 to the 23rd. The birds were found in low undergrowth as well as among the foliage of the highest trees, but seldom ventured to the edges of clearings.

Empidonax virescens. Acadian Flycatcher. The commonest flycatcher during the period it was present, or from April 28 to September 1. Young just able to fly found August 19.

Empidonax trailli trailli. Traill Flycatcher. Although this form was first described from Arkansas, it is quite partial to the prairie or thinly timbered sections, rarely venturing into timbered mountain country. I met with it twice, on both occasions along the same stream. On May 22, 1914, one was shot as it alighted on a small bush, in a field. Again found on June 9, feeding about the catkins of a late flowering willow. Neither individual, upon dissection, showed evidence of breeding.

Empidonax minimus. Least Flycatcher. Notwithstanding that no previously published record for this species has existed for the state, it occurred very commonly in migration during my stay. The vernal transit was covered between May 5 and 11. On its return southward I found it present from September 8 to 16. Brushy edges of clearings and orchards were where it was usually to be found.

Cyanocitta cristata cristata. Blue Jay. Really abundant during late summer and early fall. Toward the end of October the Blue Jay suddenly disappeared so that after the first of November, and until well into March, not a single bird could be found. A comparatively limited number were present during the nesting season. They were observed to gather into large flocks when preparing for departure to lower altitudes.

Corvus brachyrhynchos brachyrhynchos. Crow. A few crows could be seen on nearly any day through the year, but never were observed to assemble into large flocks. It is the northern form that occupies the Ozark plateau.

Molothrus ater ater. Cowbird. Straggling flocks of this species passed over the range during several days in November, 1913; a lone bird was seen December 8, 1913. In 1914 it reappeared March 22, flocks passing for a week or more. No cowbirds were otherwise observed; nor did I ever find its eggs in nests of various small species of birds examined.

Agelaius phoeniceus phoeniceus. Red-winged Blackbird. A single bird flushed from a copse, November 28, 1914, but not secured, was the only instance that I can recall near the top of the range. It is possible that this individual belonged to variety *fortis*.

Sturnella magna magna. Meadowlark. A typical adult of this form was shot as it perched on a stump in a clearing at the very top of the range, March 27, 1914. The region is not at all suited to the genus. Otherwise both *magna* and *neglecta* might be expected.

Icterus spurius. Orchard Oriole. Reached the region as early as May 3; but only a small proportion remained to breed. The few that did so were not conspicuous except during the period when the chinquapin was in bloom, after the middle of June. The flowering aments of this tree are very fragrant and contain much nectar, and are resorted to by innumerable small insects; these latter attracted the Oriole.

Icterus galbula. Baltimore Oriole. Not known to have nested in the mountains; and apparently uncommon even as a transient. On April 29, 1914, a flock of eight or nine birds alighted for a few minutes in trees near the house where I resided.

Quiscalus quiscula aeneus. Bronzed Grackle. Common enough as a transient for the first ten days in November, and again from March 8 to April 24; but as it seldom alighted I found considerable difficulty in shooting the few examples obtained.

Passer domesticus domesticus. English Sparrow. A small number were ever present in the town of Winslow; but the species was of irregular occurrence elsewhere. Roving individuals, sometimes alone, often in small flocks, could sometimes be seen inspecting barns or outbuildings, even alighting and spending a few minutes in the yard, but eventually departing.

Carpodacus purpureus purpureus. Purple Finch. A common winter visitant; arrived by November 24, and remained until at least April 20. Until the winter was well advanced the flocks kept closely to the deeper ravines

where their food supply consisted largely of sour gum, dogwood and sumae berries. When these sources were exhausted, the birds joined with flocks of gold-finchess in extracting the seed from the balls (peduncles) of sweet gum and sycamore. After the leaf buds of the ash and basswood began to swell the finches fed much on them up to the time of migration. The adult males left considerably earlier than the female and immature birds.

Astragalinus tristis tristis. Goldfinch. Abundant resident. While never seeming to lack a ready food supply, this varied much with the seasons. In the fall, favorite food items were seeds of eatmint, burdock, ragweed, etc.; in winter, seeds of sweet gum and sycamore; in spring, the unripe seeds of various plants. The bird is particularly fond of seeds of Compositae that ripen in early summer. Most of the males in the region had acquired the nuptial plumage by April 20.

Spinus pinus. Pine Siskin. On March 25, 1914, four were observed to alight in an apple tree in the yard at the farm where I stayed. A single bird was seen the following day feeding on the ground nearby.

Poocetes gramineus gramineus. Vesper Sparrow. A migratory "wave" of sparrows reached the mountains on March 25, 1914; and on that date, I noted perhaps twenty-five Vesper Sparrows in a large apple orchard. Some of these birds were singing vigorously. They remained for about two weeks.

Passerculus sandwichensis savanna. Savannah Sparrow. Several birds were observed on April 6, 1914, in company with the preeding, and in the same orchard. One of the birds was singing sweetly.

Ammodramus bairdi. Baird Sparrow. On March 23, 1914, while walking through the orchard previously referred to, a sparrow was noted in a flock of snowbirds feeding in the grass. On my approach the juncos flew away, but the sparrow alighted in a nearby tree, where it was shot. Examination proved it to be as above, and a new addition to the state list. Several of the toes on one of the feet of this individual were malformed.

Ammodramus savannarum australis. Grasshopper Sparrow. One bird collected April 4, 1914, from the grass in the orchard referred to. This constitutes the sum total of my knowledge of this sparrow in the region. There are few published records for it in Arkansas.

Passerherbulus lecontei. Leconte Sparrow. Previous observers have recorded this sparrow from Fayetteville and Van Buren, and as Winslow lies in an almost direct line between these localities, it was not surprising to find it there, although I believe that this is the highest altitude (2100 feet) yet accorded to the species. On November 29, 1913, while making my way through a bramble patch, a bird arose from almost under my feet, and alighted a few yards away, when I was able to flush and secure it. The species was not again met with until May 11, 1914, when a bird that I could not readily identify was heard to utter a series of sharp notes from among a clump of indian currant. It resisted my efforts to get a clear view of it, although it was continually moving. So it was necessary for me to shoot it in order to name it.

Chondestes grammacus grammacus. Lark Sparrow. A few days after my arrival in the region, or about April 23, 1914, happening to be standing near a spring in a partly wooded pasture, my attention was drawn to a bird walking slowly about on the ground near the edge of the water hole. It was easily identified as the above, and it did not attempt to fly during the few minutes I remained near the spot. This was at an altitude of 2100 feet.

Zonotrichia querula. Harris Sparrow. Recorded as an irregular transient. Several birds were seen during the first week of May, 1913. These kept closely to brier tangles growing along a rivulet in an old orchard, and shunned the company of other sparrows. On October 24, 1913, perhaps six or eight individuals came under my notice during a morning tramp, and constituted a fractional part of the motley assemblage of sparrows observed that day.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow. Large flocks were about during the first half of May, 1913, when they spread alike over field and woodland. In 1914 but two birds were noted, these appearing on May 6. None were found during fall or winter.

Zonotrichia albicollis. White-throated Sparrow. The advance-guard arrived on October 24, in 1913, and within a few days, and for a month or more thereafter, outnumbered all other species of birds combined. Perhaps five percent remained through the winter. Reappeared in force in early March; it soon began to molt into the pre-nuptial plumage which was, as a rule, fully acquired before the final departure May 6. Became very secretive toward the end of its stay.

Spizella monticola monticola. Tree Sparrow. A mixed flock of this species and snowbirds was found February 16, 1914, in an open woodland. Others were seen the following day. This was about the coldest period of the winter. Examples secured proved to be the eastern form, *monticola*.

Spizella passerina passerina. Chipping Sparrow. Wherever there was evidence, past or present, of human habitation in the mountains, the "chippy" was pretty sure to be present during most of the year, being absent only in January and February. Young of the first brood were found, able to fly, May 22; and parents were observed feeding young after nest construction for a later brood was in progress. Several pairs of this sparrow nested about the farmhouse where I lived. They certainly could be considered a potent factor in the success of the crops in the adjoining vegetable garden. Time and again I watched adults alone, or with young, work methodically up and down rows of vegetables, securing results at every few feet. Toward the end of summer, after the species had assembled into flocks to wander over more extensive areas, the garden growth showed plainly the lack of these feathered guardians.

Spizella pusilla pusilla. Field Sparrow. Resident, but the number present during the winter months is insignificant compared with the abundance during the other seasons of the year. A goodly percentage of birds was still showing molt in October. While the western form *arenacea* has occurred within the state, examples from this region covering the year prove to be *pusilla* alone.

Junco hiemalis hiemalis. Slate-colored Junco. A snowbird was detected among a flock of Field Sparrows, October 11, 1913, but it was nearly the end of the month before the species arrived in force. During the time of its presence here, it proved to be the same gentle and companionable bird as in its summer home. The last individuals departed April 18.

Melospiza melodia melodia. Song Sparrow. Did not arrive until freezing weather had been experienced. Its initial appearance was on October 23. After this date and throughout the winter, two or three birds might be found in a day's tramp, if diligently searched after; but even during the height of the spring migration this average could rarely be increased. Disappeared toward the end of April.

Melospiza lincolni lincolni. Lincoln Sparrow. Noting a rather large sparrow among a number of Field Sparrows, moving about in piles of brush in a clearing, I fired and picked up a Lincoln and an English Sparrow, as the result of one cartridge. This occurred on September 30, 1914. None was again seen.

Melospiza georgiana. Swamp Sparrow. All the individuals of this sparrow that came under my observation were found among clumps of underbrush growing in the bottoms of the wider ravines. Recorded as a spring transient only, and present from April 6 to May 10, 1914; at least four were seen on the last named date.

Passerella iliaca iliaca. Fox Sparrow. Was as plentiful in the region, during its season, as I have ever found the species in its various forms anywhere. Arrived by October 30, and remained throughout November and December. Reappeared March 5, and stayed through the month. Frequently consorted with Cardinals, as both species were partial to the same situations—thick brush edging clearings.

Pipilo erythrophthalmus erythrophthalmus. Towhee. Restricted in numbers at all times, and uncommon during the winter months. Nests with full complement of eggs observed during first week of May. Young of a later brood, just able to fly, July 24.

Cardinalis cardinalis cardinalis. Cardinal. While not as numerous in the hill country as in the lowlands of the state, still the Cardinal is one of the characteristic resident birds of the region. The males were in the full glory of their nuptial song by the end of February, although nest-building did not begin for a month later.

Zamelodia ludoviciana. Rose-breasted Grosbeak. The fewness of records for this species in Arkansas is undoubtedly due to a paucity of observers, and not to rarity of the bird. I found it to be very common in heavy woodland, between April 25 and May 15. It was very quiet while present, uttering only an occasional "clink". On one occasion I found a pair of these Grosbeaks and several Cardinals together feeding upon the ground in the forest in perfect comity.

Passerina cyanea. Indigo Bunting. Few birds were as numerous during the warm months as this species. It arrived by April 25, and did not depart until the 15th of October or later. The young were first seen on the wing July 19. About the first of September they congregated in large flocks in brush and low growth.

Piranga erythromelas. Scarlet Tanager. While this and the following are common spring and summer visitants, the present species is less conspicuous, due to the fact that except for a short period after arrival it keeps closely to the heavily forested ravines and hillsides with northern exposure. Males arrived April 20, females a few days later. Date of departure, about September 1.

Piranga rubra rubra. Summer Tanager. This handsome bird was very common during the spring and summer of 1913, less so the following year. In 1913 it was first noted April 19, the next year not until May 2. It is pretty much confined to oak woodland during the nesting season. The males sang volubly until the end of July. The species molts very tardily; an adult taken October 3, had the tail and many of the quill feathers but half grown.

Progne subis subis. Purple Martin. Martin houses are quite general

about homesteads in the mountains; yet there is little doubt that a considerable number yet nest in hollow limbs or tree trunks. The earliest date of arrival was March 26; none were seen after September 28. Young were on the wing by July 18.

Petrochelidon lunifrons lunifrons. Cliff Swallow. A small flock was seen near the end of April, 1913, circling about over an orchard.

Iridoprocne bicolor. Tree Swallow. Observed on the following dates only: a flock of five October 3, 1913; the next spring, a pair on April 20.

Bombycilla cedrorum. Cedar Waxwing. This species has been reported to breed in northern Arkansas; but I was unable to find it nesting, or even to see any birds during June, July and August. I began to notice large flocks as September advanced; and from then until cold weather set in, they were much in evidence. Cedarbirds are very fond of pokeberries, and many of the birds had the plumage stained in great or lesser degree with the juice of the berry. The chin and throat feathers are evidently the last part of the plumage of the Waxwing to be acquired after molting. Such examples as were taken during September and October, all had these parts scantily feathered, or with the new feathers yet in the sheaths.

Lanius ludovicianus migrans. Migrant Shrike. I came upon a shrike May 27, 1914, as it was catching some large insect upon the ground in an open woodland. It was rather shy, and I was unable to obtain it; which is somewhat regrettable seeing that it was the only time I met with the species in the mountains. However, examples examined by the Biological Survey, secured by various collectors from many parts of the state, including the lowlands, were determined as *migrans*. So under that form I list it.

Vireosylva olivacea. Red-eyed Vireo. By far the most abundant member of the group found in these mountains, and the commonest arboricole bird during late spring and early summer. Arriving by April 16, nest building was soon in progress, and almost completed structures were found May 8. Returned southward after the middle of September, the last loiterers being seen on the 22nd.

Vireosylva philadelphia. Philadelphia Vireo. Four species of vireo in considerable numbers were observed in a single tree at the same time, on April 30, 1914. Three or four of these individuals were *philadelphia*. They were actively hunting through the topmost foliage of the tree along with a greater number of *flavifrons*; while in the lower foliage foraged *olivacea* and *griseus*. An addition to the state list.

Vireosylva gilva gilva. Warbling Vireo. While previous knowledge of the distribution of this vireo within the state during the nesting period was limited to the immediate vicinity of the Mississippi river, it must in reality occur at that time over most of the state, as I found it throughout the summer months to the very top of the range. However, it was much more abundant in migration, especially during the autumnal transit. The extreme dates for arrival and departure were April 27 and September 9.

Lanivireo flavifrons. Yellow-throated Vireo. This species and the Cerulean Warbler arrived within a few days of each other; each was partial to the same character of woodland, and both haunted the top-most foliage of trees. The Yellow-throated Vireo was common almost immediately after its initial appearance, which was as early as April 18; nidification proceeded at once,

and at least two broods were raised in a season. Last seen September 16, at which date the post-nuptial molt had been completed.

Lanivireo solitarius solitarius. Blue-headed Vireo. Found during the autumnal transit only. It arrived within a few days of the same date during the two years spent in the region. The period it was present was included between the dates September 28 and October 5. I do not recall ever having heard it utter even a call-note, and naturally such an unobtrusive bird was easily overlooked. It was seldom found elsewhere than at the edge of woodland, or in orchards, usually bringing up at the rear of a composite flock of small birds ranging about at that season.

Vireo griseus griseus. White-eyed Vireo. Wherever clearings had been made and then allowed to become partially overgrown with blackberry and greenbrier, a pair or more of White-eyes were pretty sure to be found domiciled during the warm months. Even the laggards had arrived by April 15, and from that date until the time of departure, September 21, there were few days that I failed to hear its cheerful notes. The latter half of July was the period of heaviest molt; by September 1 the new plumage had been acquired.

Mniotilta varia. Black-and-White Warbler. This was the first warbler to appear in spring. It arrived while the forest was yet devoid of foliage; but several species of trees were flowering, notably *Prunus injuncunda*, and on the insects drawn to the bloom of this tree, it fed largely for a few days. Partial to varied situations, hills and ravines. Present from March 30 to October 17 inclusive.

Helmitheros vermivorus. Worm-eating Warbler. As far as I could discover this species was restricted, within my sphere of observation, to bottom and slopes of a single ravine, where three or four pairs nested during 1914. It was first seen on April 22, hunting through foliage of indian currant; and it is worthy of mention that although considered a ground-loving species, I never actually found an individual in that situation. No molting birds were observed. Date of departure, September 14, or thereafter.

Vermivora bachmani. Bachman Warbler. The continued effort of some bird with notes much resembling those of *V. luciae* of the southwest, issuing from among the foliage of a large sweet gum, drew my attention while walking in a ravine bottom, May 5, 1914. It was some moments before I could obtain a good view of this bird, as, although singing constantly, it was continually moving about. When finally secured it proved to be an adult in somewhat worn plumage. Previous records for this warbler within the state were confined to the lowlands in the vicinity of the Mississippi River, and never, I believe, at this altitude (2000 feet) elsewhere. The brook along which it was found is a small head-stream of Lee's Creek, which in turn, flows into the Arkansas River; and this was perhaps the route followed by this individual in reaching the mountains.

Vermivora pinus. Blue-winged Warbler. One of the commonest warblers of the spring migration, and a few remained throughout the summer. The first arrivals were recorded April 24. The sweet gum could be as appropriately associated with this species in the region, as *Dendroica d. albilora* with the sycamore elsewhere.

Vermivora chrysoptera. Golden-winged Warbler. The first and only record for the region as well as for the state is of a single bird found in a grove, mostly consisting of witch-hazel, in a ravine bottom, May 16, 1914.

Vermivora ruficapilla ruficapilla. Nashville Warbler. Found as a regular transient, but in limited numbers, both spring and fall. In the former season it was present during the latter half of April; the autumnal transit covered the month of September, after the 8th. It was several times heard to sing while here, and its notes were to my ear the strongest in volume of any member of the genus with which I am acquainted.

Vermivora peregrina. Tennessee Warbler. For several weeks after April 28, 1914, large numbers were observed in heavily timbered ravines where they frequented both undergrowth and tree-tops. Very few individuals were in full breeding plumage.

Compsothlypis americana usneae. Northern Parula Warbler. The most abundant warbler during migration, and plentiful during the summer months. However, the breeding birds are to be included under *ramalinae*, if that form be recognized. Present from April 6 to September 24, inclusive.

Dendroica coronata. Myrtle Warbler. This warbler, so generally distributed over the greater part of North America, was observed on but few occasions. In fact, several other species of the genus, familiar birds of the eastern states, were entirely missing here. Several Myrtle Warblers were distinguished among a flock made up of various species, October 28, 1913. Again seen April 29, 1914.

Dendroica magnolia. Magnolia Warbler. A single bird seen May 22, 1914, constitutes the only record I secured for the species. This individual was one of the last transients of that spring.

Dendroica cerulea. Cerulean Warbler. Was the only member of the genus to be found in numbers. Arriving by April 16, and before the trees were fully leaved out, it was readily detected as it moved about in the tops of the highest trees on heavily forested slopes and in ravines. Later as the foliage developed it was less apt to be observed, and after nidification began in early May grew very secretive. Left the region soon after the middle of August.

Dendroica pensylvanica. Chestnut-sided Warbler. Five were seen in trees fringing a stream on May 13, 1914; and a week later, a single bird was detected in a small oak, on a dry hillside.

Dendroica striata. Black-poll Warbler. Early in the morning of April 24, 1914, a nasty foggy day, a number of birds congregated in plum trees growing near the house where I lived. Among these, was a bird I could not identify in the poor light, and so I concluded to shoot it. It proved to be a female Black-poll, and a rather early arrival, judging from migration records at hand for the species in this latitude. It was not again met with until May 16.

Dendroica dominica albilora. Sycamore Warbler. I maintained a close watch for this species whenever I came into the vicinity of sycamore trees, and was finally rewarded in finding several individuals, in the company of Parula Warblers, September 16, 1914. The only bird taken had completed the post-nuptial molt.

Dendroica virens. Black-throated Green Warbler. Not observed during the spring of 1913. Individuals were seen on August 13 of that year, and thereafter for a month or more it was quite numerous. In 1914 it was detected on April 24 and May 19, and missed entirely during the autumnal transit. Found in all variety of woodland, when present at all.

Dendroica vigorsii vigorsii. Pine Warbler. Coniferous trees were en-

tirely missing, in the parts of the mountains covered by these notes; consequently the only time I met with this bird was during a migratory "wave", September 29, 1914, when two individuals in company with a dozen or more birds of several species alighted to feed among the trees of the grove through which I was passing. They were quickly distinguished by the characteristic notes, often uttered; whereas other species present were quite silent.

Dendroica discolor. Prairie Warbler. A common summer visitant, found to the summit of the range, in abandoned clearings, old orchards, and lumbered over areas were present. Arrived about April 28; sang constantly up to May 25; departed very early; none seen after July.

Seiurus aurocapillus. Ovenbird. Excepting for such areas as had been recently cut over, Ovenbirds were everywhere present as summer visitants wherever the forest remained. Reached the region by the middle of April, and did not depart until September 15.

Seiurus noveboracensis notabilis. Grinnell Water-Thrush. The other members of the genus had left when this species arrived. It was recorded September 18 and 21, 1914, a single bird being seen on each date.

Seiurus motacilla. Louisiana Water-Thrush. Common summer visitant; confined to the vicinity of the larger streamlets. While its alarm note was nearly always sounded before I could locate the bird, yet, after the nesting period had passed, it was much more easy to approach than before. Young, able to fly, were found June 4; later broods appeared up to the end of July. A few birds showed evidence of partial molt, even in April; by the 10th of July, practically all adults were in ragged plumage; but by the time of departure (after August 15), the new plumage was fully acquired.

Oporornis formosus. Kentucky Warbler. A favorite location for this attractive species was a shaded slope where numerous springs issued forth; it was also frequently found in low situations along streams. The earliest arrival was recorded April 22. Young were about June 6. Departs early; but a few birds lingered until September 7. One of the most confiding of small birds.

Oporornis philadelphia. Mourning Warbler. It is pretty certain that this is one of many species of migratory birds preferring to pass around, rather than over, the range. With habits and movements resembling the Hooded Warbler, it was difficult to distinguish between the two species in the dense underbrush shaded by forest trees. So, of the limited number venturing into the region, few were seen. But records are at hand showing its presence from the end of April, to as late as May 21.

Geothlypis trichas trichas. Maryland Yellowthroat. Howell writes of this as one of the commonest of small birds within the state; yet I rarely met with it in the higher parts of the range. Several were seen during late April, 1913; and one was secured from a brush pile in a pasture May 21, 1914.

Icteria virens virens. Yellow-breasted Chat. A well distributed summer visitant; found on the highest hills, if bramble patches existed. One of the later arrivals, none being noted before April 30; but the bulk of its number reached the mountains together. Young, fully feathered, seen July 18. Chats left for the south before September.

Wilsonia citrina. Hooded Warbler. Chooses rather drier woodlands than the Kentucky Warbler, but equally numerous, also arriving earlier and departing later. Extreme dates were April 18 and September 24. Males

reached the mountains a week or more ahead of the females; but nidification began as soon as the latter sex arrived, nests nearly completed being found May 5. The gray edging to the feathers of the black throat-patch of the adult male, was distinguishable by July 15.

Wilsonia pusilla pusilla. Wilson Warbler. An uncommon transient; occurred in the region May 8 to 13, and September 7, 1914; on all occasions found in dense undergrowth.

Wilsonia canadensis. Canadian Warbler. One bird taken August 26, 1914, in second-growth woodland, was the only time the species was met with. This individual had suffered some accident that had left a large portion of the crown with the skull exposed; but the general physical condition of the bird did not appear to have been affected.

Setophaga ruticilla. Redstart. Plentiful as a transient; less so as a summer visitant. Appeared by April 18; young fully feathered July 26; remained until September 21. During the nesting period, it was rarely found any distance from water.

Mimus polyglottos polyglottos. Mockingbird. Rather numerous resident about the base of the range; but decidedly uncommon in the higher parts. A single individual seen in dense growth bordering a stream at an altitude of 1900 feet on May 13, 1914.

Dumetella carolinensis. Catbird. I observed this species at irregular intervals between May 2 and October 3. Never more than four birds were seen in one day, and often weeks passed without any being noted. Was most frequently seen about the time cherries were ripening, upon which fruit it fed.

Toxostoma rufum. Brown Thrasher. Singularly enough, I met with the thrasher but once while in the Boston mountains. What appeared to be a stray transient was seen near the top of the range, September 30, 1913.

Thryothorus ludovicianus ludovicianus. Carolina Wren. Found in all kinds of situation, throughout the mountains, every month of the year. I think it raised three broods each year; the first was out by May 19. Adults began to molt heavily soon after the initial brood was launched.

Thryomanes bewicki bewicki. Bewick Wren. This wren appeared mostly during the migrations. It was decidedly uncommon during the summer months, but was frequent during the early part of October. In spring it arrived by March 27. As much of a brush haunting species as the following, but affecting more open situations.

Troglodytes aedon parkmani. Western House Wren. Uncommon; noted only as an autumnal transient, occurring between September 17 and December 8. Several were seen during each year I spent in the region.

Nannus hiemalis hiemalis. Winter Wren. Another species that was seldom observed. The few that were seen were confined to the roughest slopes of ravines. Present between November 7 and April 4.

Certhia familiaris americana. Brown Creeper. Appeared to be rather uncommon, except during a few days in early spring; however, it was irregularly present from October 2 on, throughout the winter. On April 7, 1914, a great number of Creepers passed through the region; three or four birds were seen on a single tree at once. They are able to walk head downward with almost the ease of a Nuthatch, when occasion requires.

Sitta carolinensis carolinensis. White-breasted Nuthatch. A fairly common resident; but its numbers were considerably increased in late autumn and

winter by individuals that had nested farther north. The young of the first brood appeared during the first week in June. During the nesting period adults were often seen creeping about the very roots of the trees.

Baeolophus bicolor. Tufted Titmouse. An abundant resident in the region; fully as numerous as the following species. Nidification commenced about April 20.

Penthestes carolinensis carolinensis. Carolina Chickadee. This and the preceding species were probably the most frequently observed birds in the higher parts of the range. The young of the first brood were able to leave the nest about May 20. A nest found in a stump in an open field contained four birds about ten days old. Two of them lacked the tarsi of the right foot; nevertheless they appeared as spry as the normal individuals.

Regulus satrapa satrapa. Golden-crowned Kinglet. Neither species of kinglet was present in winter; but this one was a rather common transient for brief periods, both in spring and fall. In the former season it was present from March 17 to 27; in autumn appearing October 28.

Regulus calendula calendula. Ruby-crowned Kinglet. Very abundant for considerable periods in autumn and spring. Arrives from the north by September 24, remaining until near December 1. Reappears in spring on April 5 and remains as long as the various fruit trees are in bloom. Farther north and east it is the warbler tribe that is associated with the apple blossom; here it was the Ruby-crowned Kinglet.

Poliophtila caerulea caerulea. Blue-gray Gnatcatcher. As a summer visitant the gnatcatcher was as numerous as in any region through which I have traveled. It was pretty evenly distributed throughout the mountains. Arrived by April 16, had fully feathered young July 24, and departed about September 16. Excepting during the nesting period, it was generally associating with titmice whenever seen.

Hylocichla mustelina. Wood Thrush. The few that remained to nest in the mountains were very localized in distribution, confining themselves to the underwood of a few very deep ravines. Arrived toward the middle of May, but rather tardy in completing the nest; found uncompleted sets of eggs far into July. Present until September 21. During September many birds had the plumage stained from contact with poke-berries.

Hylocichla aliciae aliciae. Gray-cheeked Thrush. Found to be a common transient during spring, but not seen in fall. Arrived with the following species, and for a few days equally as abundant. All had departed by May 11.

Hylocichla ustulata swainsoni. Olive-backed Thrush. An abundant spring, and a fairly common autumn, transient. Present from April 28 to May 25, and from September 7 to 18. Not as retiring a bird as the preceding.

Hylocichla guttata pallasi. Hermit Thrush. Fewer of this species were seen than of any other thrush recorded. Found between November 5 and January 10; rarely more than a single bird seen in a day.

Planesticus migratorius migratorius. Robin. Not known to have bred in the immediate vicinity; but I found Robins present, and apparently preparing to nest, while visiting Fayetteville, 23 miles north of Winslow, April 15, 1913. As a fall and spring transient it is very numerous, and a few winter. Began to arrive from the north October 1, and remained in spring until April 7.

Sialia sialis sialis. Bluebird. Common resident, but the numbers were greatly increased by winter visitants. Its principal food during the cold weather was sumac berries. Nidification began about March 25. Young and adults were both molting heavily as late as September 18.

San Antonio, Texas, October 22, 1914.

FROM FIELD AND STUDY

Barn Owls as the Farmer's Friends.—On May 13, 1914, while staying for a short time at the Herminghaus Ranch near Mendota, Fresno County, California, I was informed that there were two nests of Monkey-faced Owls in the tank house, which is a large three-story affair built on a slight knoll a short distance from the house. Although the tank is still in place the building has been in disuse for several years.

Upon investigation I found that two pairs of Barn Owls (*Aluco pratincola*) had shared the structure with a colony of Cliff Swallows and a great number of bats. One nest was placed in the tank on the bones, fur, pellets, and refuse that had accumulated to a depth of several inches. One bird was perched on a beam overhead asleep, while his mate occupied the nest which contained four very small birds and six eggs. Scattered about on the floor were five Pocket Gophers (*Thomomys*), five Kangaroo Rats (*Perodipus*), one Pocket Mouse (*Perognathus*), and two white-footed mice (*Peromyscus*), all of which were in good condition and undoubtedly of the previous night's capture. Besides these, there were partly eaten remains and fresh skeletons of several more. All evidence pointed to the fact that this place had been used for a great many years by owls, as I picked up nearly four hundred entire pellets and could have secured many more.

The other nest was on the floor of the platform between the siding and tank in a rather exposed situation, and the nine eggs had been deserted for some time.

A second visit was made to the Herminghaus Ranch on July 19, and upon inquiry about the owls, I was informed that all of the ten eggs in the first mentioned nest had hatched and only one of the owlets failed to come to maturity. My informant also stated that early in June a second set, consisting of seven eggs, had been deposited and produced seven sturdy birds, the youngest of which was still present, being unwilling to attempt a long flight.

Aside from the late nesting dates, there was another fact that may have had some significance. Mr. Albert Foster, the superintendent of the ranch, realizes the great benefit that he derives from the presence of such efficient mammal destroyers about the place, and affords them protection at all times; but he informs me that a former tenant persistently shot all hawks and owls and destroyed their nests at every opportunity, and that on the Herminghaus Ranch, the Barn Owls were reduced almost to the point of extermination. Is it not possible that these nocturnal hunters, now safe from persecution, are depositing large sets of eggs in an effort to regain their normal abundance in that region?

If the thoughtless farmers who so relentlessly destroy this owl on account of its supposed fondness for chickens and pigeons would take the trouble to keep watch of a nest-site through one season, the most ignorant among them could hardly fail to realize that they are working against their own best interests whenever they kill a Barn Owl. Then, if we could convince sportsmen that all hawks and owls are not the ravenous destroyers of game birds that hunters generally suppose them to be, we would not be saddened by the all too frequent sight of the remains of numerous innocent Sparrow Hawks and Red-tails that are to be found on the ground beneath the telephone and power wires along so many of our country roads during the shooting season, and the plague-infested squirrels, of which we have heard so much in recent years, would cease to be a supposed menace to our health, or destroyers of the farmers' crops.—JOHN G. TYLER, *Fresno, California.*

Two Birds New to California.—*Hydranassa tricolor ruficollis*. While collecting January 17, 1914, at La Punta, located on the south end of San Diego Bay, I shot a Louisiana Heron. It proved to be an adult female.

Vircosylva olivacea. While skinning birds at home on the screen porch, October 6, 1914, I heard a strange bird call in a fruit tree outside. Picking up my gun I soon had the specimen in hand. It was an adult male Red-eyed Vireo.

The identification of these specimens was made by Mr. J. Grinnell.—LAURENCE M. HUEY, *San Diego, California*.

Return of Winter Birds to the Same Locality.—For two winters I have been feeding birds about our canyon home. During the winter of 1912-13 I scattered the food on the hill-slope in front of our dining-room window, and was rewarded by the daily appearance of Song Sparrows, Fox Sparrows, the two Towhees, Golden-crowned Sparrows, Thrashers and Wren-tits.

The next winter, 1913-14, for photographic purposes I began putting the food on the railing of the narrow unroofed porch, which extends under the window. It took some time to induce all the different varieties to come to this new table, which was set for them immediately in front of a large plate-glass window and at a distance of only three feet. But one by one they overcame their shyness, and came even when several observers stood just inside the window.

On the morning of September 27, 1914, a Golden-crowned Sparrow made his first fall appearance on the feeding-ground, and a few minutes later he flew up on to the railing in search of food. At seven o'clock on the morning of October 4, 1914, I saw a Fox Sparrow on the feeding-ground. At nine o'clock he, too, was feeding on the railing. He may very likely have been there earlier, but I had not caught him at it.

It would seem to me quite unreasonable to suppose that these birds were not the same birds that had been trained to pose for photographs on my railing during the previous winter.—MRS. AMELIA S. ALLEN, *Berkeley, California*.

Note on the Feeding Habits of the Blue-fronted Jay.—In July, 1914, I spent a few days with friends in the Yosemite Valley. On July 12 we made a trip to Sierra Point, then came down to "The Happy Isles", in the Merced River below Vernal Falls, where we spent some time. While eating luncheon a Blue-fronted Jay (*Cyanocitta stelleri frontalis*) came near us, evidently in quest of food. A good-sized piece of cracker thrown to it was seized at once. With the cracker in its beak the bird ascended from limb to limb nearly to the top of a tall tree near by, then, flying across the river, disappeared in the heavy forest on the other side. In a few moments it returned. Another small bit of cracker was thrown to it which it ate at once.

When still another small piece of cracker was thrown on the ground not fifteen feet from where we sat eating our luncheon, the bird picked it up and, flying to a large cedar tree near by, alighted upon the trunk about five feet from the ground. Then we saw the bird put the cracker in a crack in the bark, driving it in securely by tapping it vigorously with its bill. And then came the most interesting and unexpected act of the performance: the bird pulled off three or four small pieces of bark and placed them in the crack in such a way as to quite effectively cover up the cracker and protect it from easy discovery!

The bird then came back for a larger piece of cracker which it carried across the river as it did the first piece, first ascending by a series of short flights well toward the top of the same tall tree and then disappearing among the trees on the other side. Several of our party then went to the tree where the bird had hidden the cracker and all saw the cracker and the pieces of bark with which the bird had covered it up so neatly.—BARTON WARREN EVERMANN, *California Academy of Sciences, San Francisco*.

Another Record of the Occurrence of the Emperor Goose in California.—While in San Jose recently I noticed a mounted Emperor Goose (*Philacte canagica*) in a store window. On inquiry at the store and through the correspondence which ensued, I was able to get the following information. The specimen was obtained on the Glyde Ranch near Davis, Yolo County, California, by G. H. Anderson of San Jose. The mounted specimen bears the date of December, 1906. Mr. Anderson says that the bird had been seen on a pond for about three weeks before its capture, and that other hunters had not been able to get close enough for a shot. By driving within ninety yards, a lucky shot brought it down.

The Emperor Goose is the least migratory of all the geese, seldom going more than a hundred miles south of its breeding range along the coast of western Alaska. The occurrence of this goose in California is always of sufficient interest to merit a record.—H. C. BRYANT, *Berkeley, California.*

Notes from San Bernardino, California.—On the 4th of October, 1914, and again on the 6th, I saw a band of about fifteen Pinyon Jays (*Cyanocephalus cyanocephalus*) here in San Bernardino. Dr. Horace Gaylord informs me that these birds have been occasionally seen at Pasadena; but in over twenty-five years of observation I never have known of their occurring in the San Bernardino Valley, nor has Mr. R. B. Herron seen any. This year's visit of the Pinyon Jay was therefore a great surprise to me.

Another new record here, although of course it is due to the aid of man, was the finding by me on April 22, 1914, of a nest and twelve eggs of the Ring-necked Pheasant (*Phasianus torquatus*). The identification was positive. The birds were manifestly some that had been liberated in the vicinity, but they had become very wild and I am of the opinion that in time this game bird will become permanently established here.—EDWARD WALL, *San Bernardino, California.*

Occurrence of White-crowned Sparrow near Claremont, California.—On April 24, 1914, an adult male White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*) was shot near Claremont, by Halsted White of this place. The specimen was brought to me and is now in my collection. I have spent considerable time collecting this winter and spring, both about Claremont and up to 6000 feet altitude in the mountains to the north of here, and this is the first one of these birds that I have seen. This bird was shot in the brush along the base of the foothills.—WRIGHT M. PIERCE, *Claremont, California.*

Bird Notes from British Columbia and Southern California.—In the year 1884 I read in the *Daily Colonist* an account of a California Brown Pelican (*Pelecanus californicus*) having been seen flying about Esquimalt Harbour, B. C., and the paper remarked that as soon as noticed some parties put off in a boat to try and shoot it, as was usual with a rare or uncommon bird. I never noticed any Pelicans there myself, although I was on water around the southern end of Vancouver Island for some years.

A young male Hooded Merganser (*Lophodytes cucullatus*) was shot near Westminster, Orange County, California, about January 20, 1914. The bird was in young plumage, with just two or three feathers on the side coming out as representing the adult male plumage.

A Spotted Owl (*Strix occidentalis occidentalis*) was shot by a hunter October 28, 1913, up San Gabriel Canyon, Los Angeles County, California. It was skinned in the mountains and no record of the sex taken. I believe the species uncommon enough to be worth noting. I have never come across any myself, but owing to their retiring habits, there may be quite a few of these in the right locality.

On May 29, 1914, I saw a fine male Scott Oriole (*Icterus parisorum*). It lighted on the electric wires on the street in San Diego close where I was and sang loudly for some time. It then flew off to some gum trees and I saw it no more, nor have I noticed it since.—H. GREY, *San Diego, California.*

Random Notes from San Diego.—*Butorides virescens anthonyi*. One nest found near National City, May 30, 1907, contained five fresh eggs; it was situated in the top of a slender willow sapling ten feet above the ground. Two nests were found at Lakeside in 1913. On May 25, a nest was discovered placed in the top of a slender willow tree. It was partly concealed by a species of climbing vine although the five fresh eggs were plainly seen through the nest from beneath. The male was incubating.

On June 8 another nest was located, situated in the top of a willow tree about 50 feet high and was only reached by ascending a nearby tree and using an egg grabber. The bird returned several times during the course of proceedings.

This nest contained four fresh eggs, and on the ground directly underneath was another egg—perfectly fresh and unbroken. It had probably been laid before the nest was completed and had fallen through; but I am unable to explain why it did not break in the great fall.

A nest found May 30 of this year (1914) at Lakeside, contained four young about eight days old. These were revisited a week later and had grown considerably, having a partial coat of streaked feathers, and appeared to be on guard with a high shrill yell

and thrusting of beaks, but yet unable to stand. At either visit no parent birds were seen.

Spizella atrogularis. A nest was located at San Diego inside the city limits by a friend. May 9, 1912, it contained one egg. The full clutch of three was taken May 12. The eggs were bluish and unspotted.

The nest was in an extremely open spot, it being easily seen for fifty yards in any direction, and was entirely built of grasses and placed about 18 inches above the ground in an upright fork of a slender chaparral. The bird was rather tame, allowing me to get within a few feet of her. But when she left the nest, it was a rapid downward flight into the nearest brush, and she would then return like a Bell Sparrow, hopping on the ground most of the way.

Ammodramus savannarum bimaculatus. A set of this species was taken for me May 17, 1907, near San Diego. Several sets were taken about that time by the same boy. May 19, 1912, while collecting on the outskirts of San Diego, a Grasshopper Sparrow was flushed from a nest containing three piped eggs and two newly hatched young. The nest was open, resembling a Horned Lark's, and was situated at the base of a small bush. The bird acted rather shy, but on my staying around the nest she would approach very close.—LAURENCE M. HUEY, *San Diego, California*.

Yakutat Song Sparrow in Oregon.—A part of April of the present year was spent by the writer in the interests of the newly formed Department Museum of Zoology of the University of Oregon, in field work at Netarts Bay, on the north Oregon coast, a few miles south of Tillamook Bay. On April 14, while searching for shore-birds among the boulders at the breakers' edge at "Short Beach", three miles north of Netarts, I was surprised to see a Song Sparrow fly up from among the rocks, out of the way of a breaker, and alight on another boulder at the edge of the breaking surf. A shot secured the bird, which Mr. Grinnell has identified as *Melospiza melodia caurina*, with a note that it is the southernmost record for the species, save for the one taken a few years ago at Humboldt Bay.

The following day, April 15, Mr. Stanley G. Jewett of the Oregon Fish and Game Commission, with whom the writer was working at the time, secured another specimen of this subspecies among the identical boulders in the edge of the surf at Short Beach.

The first specimen, secured by the writer, is now Accession 390, Univ. of Ore., Museum of Zoology, Eugene, Oregon. The second specimen, taken by Mr. Jewett, is Field No. 1810, S. G. J., Coll. of Fish and Game Comm., Portland, Oregon.—ALFRED SHELTON, *University of Oregon, Eugene, Oregon*.

New Years Day Bird Census at Palisades, Mesa County, Colorado.—January 1, 1915; 2 P. M. to 4 P. M.; distance, about 5 miles along river bank and irrigation canal; day clear and bright; light southwest wind; temperature 35. Species: Killdeer 1; California Quail 15 (others heard); Pigeon Hawk 1; Rocky Mountain Hairy Woodpecker 1; Red-shafted Flicker 5; Desert Horned Lark 150; Magpie 7; Western Raven 2; Pinon Jay 12; Brewer Blackbird 7; White-rumped Shrike 2; House Finch 15; English Sparrow 30; Gambel and White-crowned Sparrows 72; Mountain Song Sparrow 29; Goldfinch 1 (heard); Mountain Chickadee 1; Pink-sided Junco 55; Shufeldt Junco 2 (male); Intermediate Junco 10; Western Robin 1. Total, 22 species and approximately 419 individuals.

Remarks: The surprise of the afternoon was the solitary Killdeer seen, as there was ice everywhere except for the narrow channel of the river and this was full of floating ice. Three species which should have been seen but were not, are: Western Redtail, Grey-headed Junco and some variety of *Leucosticte*; the last mentioned of these probably have not come down to lower levels yet this season, on account of there being so little snow on the surrounding mountains.—J. L. SLOANAKER, *Palisades, Colorado*.

First Specimens of Baird Sandpiper from the State of Washington.—Two specimens of the Baird Sandpiper (*Pisobia bairdi*) are now in the Collection of Whitman College at Walla Walla, Washington. One of these has been compared with the series in the California Museum of Vertebrate Zoology, and proves to be still in the winter plumage. The specimens were taken by Storrs H. Lyman in the spring of 1908 on a farm about four miles from Dayton, Columbia County, Washington. Mr. Lyman has kindly furnished all available information about them. The sandpipers were taken in the early part of April, probably on either the 10th or 11th. A cold rain fell that day turning into a snow squall in the middle of the afternoon. The two birds were taken from a small flock feeding in a grain field.

Baird Sandpipers are reported to have been seen at three localities in the state (Dawson and Bowles, *Birds of Washington*, 1910, p. 656), but no specimens have been obtained previously.—LEE R. DICE, *Berkeley, California*.

THE CONDOR

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EDITORIAL NOTES AND NEWS

We wonder why the English Sparrow, now of greater abundance and wider distribution in North America than any other bird species, should be left off the A. O. U. Check-List, when, for instance, the Starling is given formal place. The ground for inclusion of the latter is its "accidental" occurrence in Greenland. Otherwise it is an "introduced" species, well established, as in the case of the Sparrow. The circumstance that man was the agent of transportation of one or more individuals, rather than a gale of wind or an iceberg, is a minor circumstance as compared with the fact that both species are now members of the North American avifauna, to be reckoned with in any sort of regional study undertaken—faunistic, ecologic or economic. The English Sparrow, and all other birds of like status, should be regularly included in all our lists, along with the so-called native species.

Every citizen of California interested in conservation of wild life owes it to himself and to other conservationists both within and without the legislature to keep close tab on what is going on at Sacramento, so that aid may be given at critical moments. The newspapers cannot fully or

adequately report the news in particular provinces. Attention is called to Franklin Hichborn's "Bulletin of the 1915 Session of the California Legislature", which will be issued every week that the California legislature is actually in session, and which will give some consideration to game conservation bills. Mr. Hichborn should be addressed at 416 J Street, Sacramento, California.

A letter has been received from Mr. Allan Brooks, dated October 27, 1914, and sent from the encampment on Salisbury Plain, England. Mr. Brooks has a commission as Lieutenant in the 9th Battalion, Canadian Contingent.

On Friday evening, November 20, 1914, Mr. William L. Finley, State Game Warden of Oregon, lectured to a large and appreciative audience in Room 101 California Hall, University of California, his subject being "Our Children and the Birds". The lecture was illustrated by five reels of motion pictures secured by Mr. Finley and assistants in Oregon during the season of 1914. The subjects included: Children building and placing Audubon Society bird houses, house cat devouring a song bird, children rearing a brood of orphaned bluebirds, activities of two bear cubs and three mountain lion kittens, a visit to the lake region of south-eastern Oregon showing the nesting and young of Wilson Snipe and White Pelicans and the mating antics of the Western Grebe, and a visit to Three Arch Rocks off the coast of Oregon. The set comprises the educational film series of the Oregon State Fish and Game Commission. The same pictures were shown at an open meeting of the Southern Division of the Cooper Club on November 17.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

OCTOBER.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, October 29, 1914. President Law was in the Chair and the following members were present: Messrs. Chambers, Daggett, Hegner, Howell, Swarth, and Wyman. Visitors were, Mrs. Mullen, Mrs. Richards, Miss Germain, and Mr. A. B. Dickinson. The minutes of the September meeting were read and approved, followed by the reading of the Northern Division minutes for September and October.

New members elected were: Miss Ida G. Jenkins, Roxbury, Massachusetts; W. H. Alkire, Hollywood; and E. F. Averill, Pendleton, Oregon. A motion was passed admitting to membership those persons voted upon at the last Northern Division meeting.

New names were proposed for membership as follows: Miss Clare Germain, Los Angeles, by L. E. Wyman; J. A. Munro, Okanagan Landing, British Columbia, by Allan Brooks; J. Stokley Ligon, Pecos, Texas, by E. A. Goldman; and the following by W. Lee Chambers: Sidney S. Stansell, Manly, Alberta, Canada; Charles L. Phillips, Taunton, Massachusetts; Miss Heloise Myer, Lenox, Massachusetts; Professor P. E. Kretzmann, St. Paul, Minnesota; Edwin S. Mattern, Allentown, Pennsylvania; Miss Harriet E. Richards, Brookline, Massachusetts.

A communication was read, received by the Secretary from the associate secretary of the Pacific Division of the American Association for the Advancement of Science, asking the endorsement of the Southern Division of the Cooper Club, of the proposed constitution of the Pacific Division. After some discussion this was accorded, and the secretary was instructed to convey to the secretary of the Pacific Division the approval of the Club.

Mr. Law, who had been devoting considerable time to the sea birds of the coast during the past summer, placed on exhibition specimens of nearly all the species of gulls found hereabout. Different ages and plumages were well represented, making an instructive exhibit, which was well explained by Mr. Law. Adjourned.—H. S. SWARTH, *Secretary*.

NOVEMBER.—The regular meeting of the Southern Division was held Friday evening, November 27, at the Museum of History, Science and Art, with following attendance: President Law, Mrs. Gertrude H. Husher, Mrs. Frances M. Harmon, and Messrs. Chambers, Colburn, Edwards, Hegner, Nokes, Rich, Smith, Swarth, Willett, Wood, Wyman, and Zahn. Mrs. George Willett was a visitor.

The minutes of the October meeting were read and approved. New members were elected as follows: Miss Harriet E. Richards, Edwin Stuart Mattern, Professor P. E. Kretzmann, Miss Heloise Meyer, Charles Lincoln Phillips, Sidney S. Stansell, J. Stokley Ligon, J. A. Munro, and Miss Clare Germain. New names presented were: Mrs. Marion L. Goodcell, San Bernardino, presented by Edward Wall; W. H. Sanford, Stockton, presented by W. Lee Chambers; and the following presented by A. B. Howell: Wharton Huber, Gwynedd Valley, Pennsylvania; F. Seymour Hersey, Taunton, Massachusetts; F. H. Ward, Rochester, New York; Dr. Leonard C. Sanford, New Haven,

Connecticut; George Osterhout, Windsor, Colorado.

The Secretary of the Northern Division transmitted a request from Mr. A. O. Treganza, petitioning that permission be granted to establish an Inter-Mountain Chapter of the Cooper Ornithological Club at Salt Lake City, Utah. The constitutional requirements having been complied with, the request was granted accordingly. A communication was received from Mr. A. B. Howell, proposing first, that the Club take action toward preparing an exchange list of birds' eggs and skins, as a standard of values. There was considerable discussion of the subject, but no action was taken at this time, the matter being allowed to lie over for a month or two to permit of further investigation by those most interested. The second point covered by Mr. Howell was that the Cooper Club take some action toward identifying itself with the work undertaken by the Bird-Banding Association of the eastern United States. On motion the President appointed Mr. Howell a committee of one to take whatever steps are necessary toward the development of this line of work.

A short letter was read, written by Mr. Allan Brooks, October 27, at which time he was encamped with his regiment on Salisbury Plain, England. Mr. Wilfred Smith made some remarks regarding bird protective legislation. Announcing that the Audubon Society (of which he is also a member) had appointed a committee to look after this phase of work, and that the different societies interested in the matter should have some method of working together, Mr. Smith made a motion that the President appoint a committee of three, whose duty would be to keep the Club in touch with whatever legislation was pending. The motion was passed, and Mr. Law appointed Messrs. Willett, Miller, and Robertson to serve on the Committee on Legislation.

A paper by Mr. Grinnell was read, entitled "Conserve the Collector". This was a strong argument for a more liberal attitude toward the collector, especially in the matter of permits, and aroused considerable discussion. Adjourned.—H. S. SWARTH, *Secretary*.

DECEMBER.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Tuesday evening, December 29. The following were present: President Law in the chair, and

Mrs. Husher, and Messrs. Blaine, Chambers, Colburn, Daggett, Gardner, Howell, Little, Miller, Morcom, Rich, Shepardson, Swarth, and Wyman. Mr. Edward G. Brown was a visitor.

The November minutes were read and approved, followed by the November minutes of the Northern Division. New members elected are: Wharton Huber, F. Seymour Hersey, F. H. Ward, Leonard C. Sanford, G. E. Osterhout, W. H. Sanford, and Mrs. Marion Lampson Goodcell. A motion was also passed admitting to membership those individuals elected at the last Northern Division meeting. New names were presented as follows: Professor W. A. Ford, Umatilla, Oregon, proposed by S. G. Jewett; J. N. Swift, Stockport, Ohio, proposed by W. Lee Chambers. The resignation of Charles H. Richardson was read, and accepted with regret.

President Law announced the personnel of the committee on arrangements for the joint A. O. U.-C. O. C. meeting in 1915, to be as follows: Messrs. Law, Willett, Daggett, Howell, and Miller. The function of this committee is to assist in the entertainment of such members of the A. O. U. as stop in Los Angeles on their way to or from the San Francisco meeting.

A letter was read, received from Joseph Dixon, in which he offered to give an illustrated talk to the Division on his experiences in the Arctic. The secretary was empowered to arrange for a special meeting if necessary. Nominations for officers for 1915 were in order at this, the last meeting of the year. After some discussion a motion was made and passed that the secretary cast a ballot electing to further service those now holding the several offices: President, J. E. Law; Vice-president, Howard Robertson; Secretary, H. S. Swarth.

Mr. Law had on exhibition specimens of the southern California species of grebes and loons, and there was some discussion of the various plumages represented. Adjourned.—H. S. SWARTH, *Secretary*.

NORTHERN DIVISION

SEPTEMBER.—The regular monthly meeting of the Northern Division was held in Room 101 East Hall, University of California, Berkeley, Thursday evening, September 17, 1914, at 8 o'clock. President Bryant was in the chair with the following members present: Mesdames Allen, Anderson and Grinnell, the Misses Andrews, Atsatt, Crane, Culver and Swezy, and the Messrs. Anderson, Bryant, Camp, Carriger, Dawson,

Grinnell, Mailliard, Silliman and Storer. Several visitors were present.

The program of the evening was first presented. Mr. M. P. Anderson spoke on "The Experiences of a Collector in Peru." His remarks were based upon a recent collecting trip which he made for the Field Museum of Chicago. The talk was illustrated with lantern slides of the scenery.

The business of the meeting was then taken up. The minutes of the Northern Division August meeting were read and approved, followed by the reading of the minutes of the Southern Division meeting of the same month. The following persons were elected to membership: Miss Hazel King, Mrs. Amy M. Bryant, Mr. Lee R. Dice, Miss Amy E. Gunn, Miss Frieda Lueddemann, Miss Mary S. Storer and Miss Dorothy Conger, as also the names proposed at the Southern Division in June and July, twenty-nine in all. The following name was proposed for membership: Dr. W. Stark, Auburn, California, by Tracy I. Storer. Nine names proposed at the Southern Division in August were read.

Mr. Grinnell made a few remarks upon the need of observations in the late summer and early fall to detect the departure of the summer visitants as well as the arrival of winter visitants. Adjourned.—TRACY I. STORER, *Secretary*.

OCTOBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, October 15, 1914, at 8 p. m. President Bryant was in the chair with the following members present: Mesdames Allen, Bryant, and Grinnell, Misses Culver and Lueddemann, and Messrs. Bolander, Camp, Carriger and Grinnell. Several visitors were present.

The minutes of the Northern Division September meeting were read and approved followed by the reading of the Southern Division September minutes. The following were elected to membership: Dr. W. Stark, and the members proposed at the Southern Division August meeting. The following were proposed for membership: Mrs. Jane J. Schlisinger, 1417 Filbert St., Oakland, by Mrs. A. S. Allen; Dr. Otto Westerfeld, 240 Stockton St., San Francisco, by Joseph Mailliard; and the persons proposed at the Southern Division September meeting.

Joseph Grinnell gave a talk on the birds observed by him in a recent trip through the Yosemite Valley. A general discussion followed. Adjourned.—CHARLES L. CAMP, *Secretary, pro tem*.

NOVEMBER.—The regular meeting of the Northern Division was held at the California Museum of Vertebrate Zoology, Berkeley, November 19, 1914, at 8 p. m. In the absence of President Bryant, Mr. H. W. Carriger was elected chairman of the evening. The following members were present: Mrs. Allen, Miss Culver, Messrs. Carriger, Reynolds, Smyth and Storer. Mesdames Reynolds and Schlisinger and one other visitor were present.

The minutes of the Northern Division October meeting were read and approved, and the Southern Division October minutes were read. The following persons were elected to membership: Mrs. Jane J. Schlisinger, Dr. Otto Westerfeld and the persons proposed at the Southern Division September meeting. The following were proposed for membership: D. Moore Lindsay, 808 Boston Bldg., Salt Lake City, Utah; R. Bruce Overington, Laurel, Maryland; F. A. Wrathall, 347 Wilson Ave., Salt Lake City, Utah; Thomas Boyer, Continental National Bank, Salt Lake City, Utah; Claude T. Barnes, 359 10th Ave., Salt Lake City, Utah; J. W. Sugden, 55 S. 8th Street, West, Salt Lake City, Utah; Mrs. A. O. Treganza, 614 East 6th St., South, Salt Lake City, Utah; and R. H. Palmer, Downey, Idaho, all proposed by A. O. Treganza; Cassie A. Davidson, 1523 Spring Street, Berkeley; Katherine E. Dolbear, 2015 13th Ave., Oakland; and Mrs. C. M. Haring, care of College of Agriculture, University of California, Berkeley, all by Tracy I. Storer; also the members proposed at the Southern Division October meeting, nine in all.

The following written communication was received. To the Cooper Ornithological Club. Under the provisions of Section Two (2), article two (2) and subsequent definitions of the Constitution, we, the undersigned members or applicants for membership in the Cooper Club, make application for an Inter-mountain Chapter of said Club at Salt Lake City, Utah. Signed: D. Moore Lindsay, R. Bruce Overington, F. A. Wrathall, Thomas Boyer, Claude T. Barnes, J. W. Sugden, J. H. Paul, Mrs. A. O. Treganza, R. H. Palmer, James L. A. Mullen, A. O. Treganza. This application was read and laid over for voting upon at the next meeting. The context of the application had already been sent to the Southern Division for consideration at their November meeting.

A communication was received from Mr. Harry Harris of Kansas City, Missouri, donating the field notebook kept by Mr. George B. Sennett on his first two trips to Texas in 1877 and 1878, and a manuscript

lecture by Mr. Sennett on the Birds of Paradise. It was moved, seconded and carried that these be deposited in the Bancroft Library of the University of California subject to the same conditions as Belding's manuscript of the water birds of California which is there deposited.

Tracy I. Storer then spoke on "Some results of a Summer Session Course in Ornithology", pointing out some of the deficiencies in the textbooks and other literature available for classroom instruction in ornithology and suggesting how some of the deficiencies could be supplied. Adjourned.*
—TRACY I. STORER, *Secretary*.

DECEMBER.—The regular monthly meeting of the Northern Division was held at the Museum of Vertebrate Zoology, Berkeley, California, Thursday evening, December 17, 1914, at 8 p. m. President Bryant was in the chair with the following members present: Mesdames Allen and Grinnell, Miss Crane, Messrs. Carriger, Grinnell and Storer.

The minutes of the Northern Division November meeting were read and approved and those of the Southern Division November meeting read. The following persons were elected to membership: D. Moore Lindsay, R. Bruce Overington, F. A. Wrathall, Thos. Boyer, Claude T. Barnes, J. W. Snyder, Mrs. A. O. Treganza, R. H. Palmer, Cassie A. Davidson, Katherine E. Doibear, Mrs. C. M. Haring, and the persons proposed at the Southern Division's October meeting. The following applications for membership were received: J. N. Kendall, 253 Magnolia Ave., Long Beach, proposed by H. C. Bryant, and the seven persons proposed at the Southern Division November meeting. The application for an Inter-mountain Chapter at Salt Lake City, Utah, was granted by unanimous vote.

A letter was read from Mr. A. B. Howell concerning the preparation of an exchange list and also concerning bird banding in the west. The President was directed to appoint a committee of one to consider the matter of bird banding for the membership of the Northern Division. Nominations for Northern Division officers for 1915 were made as follows: President, Joseph Mailliard; Vice-President, Walter K. Fisher; Secretary, Tracy I. Storer.

Mrs. A. S. Allen presented the paper of the evening, entitled "Birds of a Berkeley Hillside". The paper embodied observations made by Mrs. Allen at her home on Mosswood Road where she has set out food and also provided water for the birds to drink and bathe in. A discussion of the paper followed. Adjourned.—TRACY I. STORER, *Secretary*.

*NOTE.—The following have been appointed a committee of arrangements for the joint A. O. U.-C. O. C. meeting in San Francisco in 1915: Joseph Mailliard, Barton W. Evermann, Joseph Grinnell, John W. Mailliard.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

FOR SALE—*The Auk*, 1892-96, inclusive, five volumes in original covers, \$12.00.—W. LEON DAWSON, *Santa Barbara, Calif.*

WANTED—Ridgway's *Birds of North and Middle America*, all volumes that have appeared, excepting I, II, and IV.—AUSTIN PAUL SMITH, *742 Pennsylvania Ave., San Antonio, Texas*.

WANTED—Sets of eggs of Dotted Canyon Wren, Pacific Nighthawk, Oregon and Green Jays and Aplomado Falcon; also Bird-Lore, vol. x, complete or in parts.—C. MILLS CASE, *7 Holcomb St., Hartford, Conn.*

FOR SALE—Ridgway's *Birds of North and Middle America*, I to VI, inclusive—\$24. (wrappers); *Auk*, vol. XXVI (in parts)—\$2. Both together, \$25. Carriage extra.—B. F. CASE, *Tolland, Conn.*

WANTED—A 22 caliber repeating or automatic rifle, or a 25 Colt's automatic pistol. I would also like to correspond with any one having Coleoptera of the family Buprestidae for exchange. Can offer A-1 sets or insects in exchange for the above.—W. J. CHAMBERLIN, *429 N. 12th St., Corvallis, Oregon*.

WANTED—Loomis's *Water Birds of California*, I to V inc. Particularly want no. V. Will pay cash or give good exchange. Also want Wilson Bulletin, nos. 1 to 75.—O. P. SILIMAN, *Castroville, Calif.*

OVERFLOW list of your duplicates wanted as follows: Random Notes on Nat. Hist. I, 2, 3; II, 12; III, 5, 6, 10, 11. Oregon Naturalist [=Naturalist, Oregon City] I, 12 (Nov.-Dec., 1894). Field and Forest I, 5, 6; II, 5, 6, 7; III, 3, 4, 6, 9, 10, 11, 12. Parts or volumes of these: Amer. Osprey, Ky. Bittern, Canisteo, N. Y.; Canadian Sportsman and Naturalist; Collectors Monthly; Forest and Field, N. Y.; Hawkeye O. & O.; Hoosier Nat.; Hummer; Loon; Maine O. & O.; Naturalist & Tax.; Observer I, 4, and Audubon Magazine II, 2.—DR. W. C. BRAISLIN, *556 Washington Ave., Brooklyn, N. Y.*

WANTED—For my private library, the following publications of the Bureau of Biological

Survey (=Division of Mammalogy and Ornithology), U. S. Department of Agriculture: Bulletins 2, 4, 6, 7, 24; Circular 59.—TRACY I. STORER, *Museum of Vertebrate Zoology, University of California, Berkeley, California*.

GEOLOGICAL SURVEY OF CALIFORNIA: Ornithology, vol. I, Land Birds. Edited by S. F. Baird from the MS and notes of J. G. Cooper. 1870. The University of California now offers for sale a small number of copies of this publication, in the folded and collated but *unbound* signatures, in excellent condition. Price \$2.50 each, postage or expressage extra (weight wrapped 4½ pounds). Address The University of California Press, Berkeley, California.

WANTED—Information of all sorts concerning the breeding of ducks and shorebirds in California: Nesting dates, numbers of eggs in sets, proportion of young reaching maturity, present as compared with former status, etc.—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, California*.

WANTED—Live bats for photographing and study. Will pay cash for desired species. If you know of any colonies, correspond with:—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, California*.

MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month. Take south-bound car from town; on Spring Street the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

NORTHERN DIVISION: At the Museum of Vertebrate Zoology, University of California, Berkeley. Time of meeting, 8 P. M., the third Thursday of every month. Take any train or car to University Campus. The Museum of Vertebrate Zoology is a large corrugated iron building situated on the south side of the campus immediately north of the foot-ball bleachers.

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March-April, 1915

Number 2



COOPER ORNITHOLOGICAL CLUB

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Volume XVII

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ADAPTABILITY IN THE CHOICE OF NESTING SITES OF SOME WIDELY SPREAD BIRDS

By CLARENCE HAMILTON KENNEDY

WITH THREE DRAWINGS BY THE AUTHOR

ONE OF the most interesting things I have had the pleasure of observing while residing in the treeless intermountain region of the West, was the adaptability in manner of nesting of various kinds of birds. Birds which in the mesophytic Mississippi Valley were seldom known to nest except in trees, nested in the western desert almost wherever they could get a safe site. Robins on this frontier of their habitat nested in vines by the house door or even on rafters in the barns. Doves nested on the ground, while Flickers nested in telephone poles, and there is hardly a desert home but shows in its perforated gables the Flicker's attempts to nest. Indeed it is reported that in central Oregon, in the region of Vale, Flickers nest even in holes in the banks as do Kingfishers.

It is interesting to note in passing that these few birds, which have such plastic habits, are also those which are most widely spread across the continent. It is also interesting to note that each of these birds in its own group has a rather wide range of diet, another point of elasticity permitting it to out-range its immediate relations. These are species which have but little sensitiveness toward the encroachments of man. In fact, in the West the Doves, Robins, and Flickers, especially in the irrigated sections, have cast their lot with man in the newly conquered wastes and have given their assistance in the conflict for the mastery of those weed and insect pests which have always threatened agriculture. Perhaps it is imagination, but I have many times felt, as I have watched these semi-domestic species in their tireless work about barnyards and orchards, that they had a more plastic mentality than those of their relatives which depend on shyness, concealment, and speed to protect

themselves. They certainly cannot be as rigidly instinct-bound as are their less adaptable relatives.

Confined to the drier western half of the continent are certain species which formerly lived in the mesophytic strips along the streams, but which since man's advent have more or less adapted themselves to the new conditions and have taken up sides with man. Two of especial note are the Brewer Blackbird and the Arkansas Kingbird. As for the first species, it is a peculiarly western bird, also of plastic habits and fearless mind, and so is widely spread. The Brewer Blackbird, formerly confined to the greasewood thickets and rose bushes along the desert streams, is now one of the ranch assistants, and builds its nest in any bush or vine that is convenient to its work about the garden or orchard.

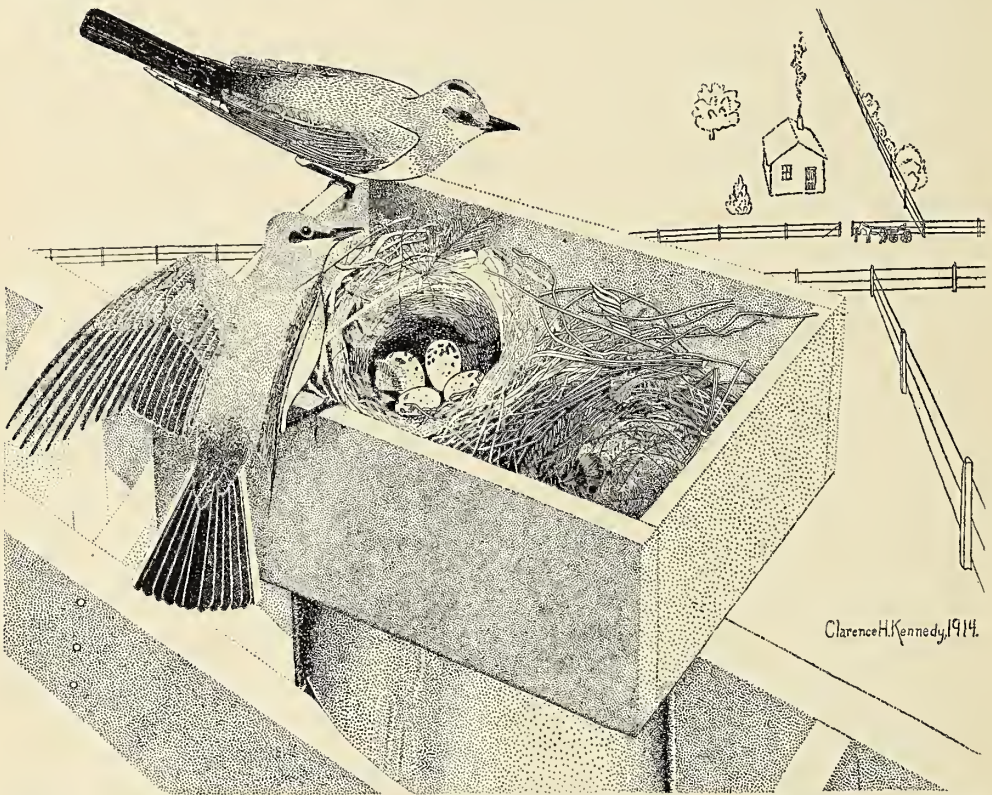


Fig. 19. AN ARKANSAS KINGBIRD'S NEST ON TOP OF A HAY DERRICK, SHOWING THE POSSIBILITY OF ENCOURAGING THESE BIRDS BY PLACING BOXES IN PROMINENT PLACES

Perhaps one of the most striking adaptations shown by any of these bird pioneers is exhibited in the nesting sites chosen by the Arkansas Kingbird (*Tyrannus verticalis*). The Yakima Valley, eastern Washington, is especially suited to showing its preferences and range in choice of sites. The valley is long and narrow, and irrigation started many years ago in its upper end.

By an intermittent development the area under cultivation was gradually extended downward until now it is irrigated for approximately forty miles of its length. In the upper parts, where irrigation has long since developed large trees, these birds seldom nest except in the larger forks of the taller

trees, while in the lower valley, where because of the alfalfa and other cultivated crops food is as abundant as in the older sections, the Kingbirds, in spite of the lack of the usual nesting sites, patrol the alfalfa fields for food, but are compelled to use the hay-derricks and telephone poles for nesting purposes. Because telephone poles are as abundant as ever in the older sections, and because the poles are practically deserted as soon as the trees become large enough to offer suitable sites, one would infer that the use of a pole for nesting was only a temporary expedient.

Almost all my observations were made during the season of 1912, my time during 1913 being entirely occupied with other work. Perhaps the following list with the accompanying remarks will show best the habits of this bird.

June, 1911. A pair built a nest at the base of the lowest horizontal limb of a five-year-old cottonwood in my door yard. No larger trees were within two miles of this. The nest which contained three fresh eggs was blown out June 3.

June, 1911. Nest on arm of electric pole in front of my home. Nest blown out June 28, 1911, probably containing eggs at the time.

June, 1911. Nest in hay-derrick on a neighbor's ranch destroyed June 28 during haying; contained young.

June 23, 1912. This day was devoted to a trip twelve miles up the valley to Granger, going on the Outlook road and returning on the hill road, with the sole object of locating Kingbird nests. These were easily located because of the open country and the noisy restless habits of the adult birds, which stay at some high outlook point near the nest and keep up a constant chattering.

The first part of this trip was along the electric line between my ranch and Sunnyside. This is a section which has been under extensive irrigation for less than ten years, and as stated previously, contained no trees large enough to suit Kingbirds. In the two miles of this line were six Kingbird nests, always next the pole, and variously placed on the cross arm, behind a converter, or even balanced behind a wire bracket. One of these nests was of the Eastern Kingbird (*Tyrannus tyrannus*). Observations at this time and on following days indicated that these nests contained at this date either eggs in advanced incubation or young birds. One of these nests blew down during a wind in the middle of July a few days after the young birds had left.

The next part of the trip followed the electric line from Sunnyside through Outlook to Granger. This low strip was one of the earliest irrigated sections, and now contains many windbreaks of lombardy poplars and black locusts. No nests were seen on poles until within two miles of Granger, where near Liberty the ground is higher, more rolling and has fewer wind breaks. Here were two poles each with a few straws hanging on its arm, the wreck of a nest blown down during a gale of the previous week. The other nests along this road were as follows: In the open country east of Outlook the nest shown in figure 19 was found on the top of a hay-derrick. The old nest in the same box showed that it had been used similarly the previous season. Three pairs of birds were seen near Outlook, the nests of which remained undiscovered. Two were in poplar windbreaks. An Eastern Kingbird's nest was found twenty feet up in a black locust east of Outlook. This nest, contrary to the habits of the Arkansas Kingbird, was well concealed by foliage. Thirteen other nests were seen, six in poplars, two in black locusts, three in hay-derricks, each of which stood in a large alfalfa field and each of which had been destroyed dur-

ing haying, and two in mulberry trees. These were the lowest nests found, one being only eight feet off the ground, while the other eleven ranged from twenty to forty feet up. Also one of this last two was built in a last season's Oriole nest. Such a site is recorded by Dawson in his "Birds of Washington". This nest is shown in figure 20. The new material of stems, hair, wool and feathers put in by the new tenants made a striking contrast to the blackened exterior of the old nest. This nest contained but one young bird, less than a week old. As mentioned previously, a violent storm had passed over this region the week before, and this nest, made too shallow by recent padding of the Kingbirds, saddled as it was to a slender upright branch, had evidently dumped the other young during the gale.



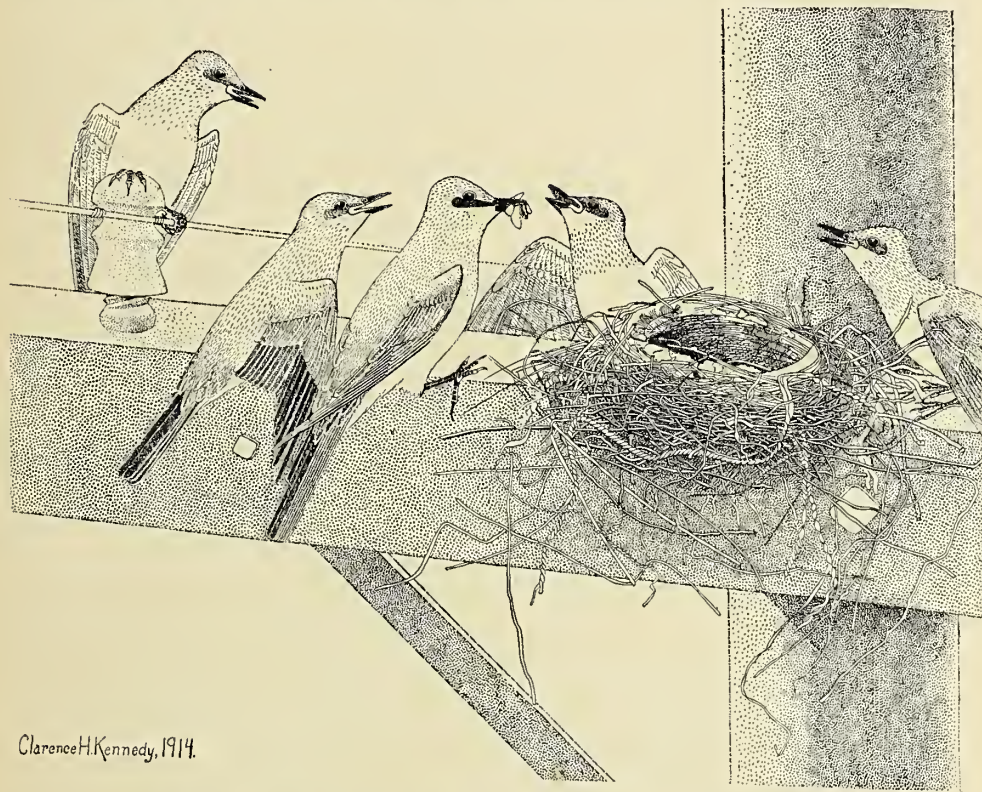
Fig. 20. AN ARKANSAS KINGBIRD'S NEST IN AN OLD NEST OF THE BULLOCK ORIOLE

On the return trip past the Outlook school, three nests were found in the black locusts bordering the school grounds, one of these that of the Eastern Kingbird. At three other poplar windbreaks birds were seen, but their nests remained undiscovered.

The nest drawn in figure 21 shows the style of nest usually built on telephone or electric poles. This was situated on Main Street in Sunnyside, and was the exception that shows the fallacy of rigid rules, for several large poplars stood near and were apparently unoccupied by Kingbirds.

Some general observations might be recorded. The Kingbirds seemed to rear but the one brood. The nests were built of small light trash, straws, string, feathers, weed rootlets, and wool (this is a sheep country where every

barbed wire fence is spotted with pieces of wool torn from passing flocks), and lined with hair and feathers. Always loosely built, the nest appeared to depend on the rigidity of its support for protection from blowing down, rather than on firm attachment to its support. More nests were placed in a three or four branched fork against the trunk of the tree than in any other situation. Such a location appeared entirely safe against wind. Except in the case of the Eastern Kingbird, no attempts at concealing the nest seemed to be made. The Arkansas Kingbird, especially, seemed to desire rather than concealment a nest in an exposed place, where it could alight easily, untroubled by foliage. This latter desideratum is probably one of the factors figuring in the Kingbirds' use of electric poles and hay-derricks as nesting sites.



Clarence H. Kennedy, 1914.

Fig. 21. AN ARKANSAS KINGBIRD'S NEST ON A TELEPHONE POLE

The use of a box for a nest, as in figure 19, made me think that perhaps Kingbirds could be encouraged to nest near dwellings, and so the following year I nailed an open box on the top of my barn. A pair of Kingbirds hung about it one day, but paid no further attention to it.

To sum up, the Arkansas Kingbird seems to prefer as a nesting site a fork near the trunk or a main limb of a large tree, such a site being from fifteen to forty feet above the ground, and exposed or easily accessible on the wing. Because of the abundance of natural food in the newly irrigated sections, the Kingbirds have entered these areas from their previous haunts among the cottonwoods of the watercourses and have adapted their method of nesting to the treeless conditions. In the very new districts they have nested on hay-

derricks and electric poles, as on the two-mile electric line between my ranch and Sunnyside, but have returned to their former nesting sites in trees when possible as is shown by the absence of nests in the ten-mile electric line between Sunnyside and Granger, which runs through an older section of the valley which is now abundantly supplied with large trees.

Coincident with this adaptation, though, can be pointed out the great mortality among the young birds in the incompleteness of the adaptation, practically total in the hay-derrick nests, and high in the electric pole nests, in the latter because of the insecurity against winds. A perfect adaptation would avoid the derricks, which are death traps during haying, and would result in building a nest securely enough fastened on an electric pole to avoid blowing down during storms.

Palo Alto, California, January 29, 1915.

NESTING OF THE AMERICAN OSPREY AT EAGLE LAKE, CALIFORNIA

By MILTON S. RAY

WITH FOUR PHOTOGRAPHS BY THE AUTHOR

DURING the past season's work afield (1914) Chase Littlejohn and the writer traveled something over a thousand miles. One of the many side trips taken was from Susanville to Eagle Lake and back, in company with Mr. Frank P. Cady, the district's game warden. As we were engaged in gathering certain data for the Fish and Game Commission, in addition to our own personal field-work, Mr. Cady aided us in every way possible, besides placing his motor car at our disposal.

Although we arrived at Truxell's on the east-central shore of Eagle Lake at dusk on May 16, it was not until we reached Schuler at the northern end of the lake, at noon next day, that we saw our first American Osprey (*Pandion haliaetus carolinensis*). The occurrence of this species was of particular interest to me as Eagle Lake is one of the few points in inland California from which the bird has been recorded as not uncommon during the summer.

On account of the bad condition of the roads we left the motor car at Schuler and continued on to Spalding's, our final destination, by motor boat. At Spalding's, which lies in heavy timber on the southwestern side of the lake,



Fig. 22. NEAR SCHULER, AT THE NORTH END OF EAGLE LAKE. THE REGION HERE IS BUT SPARSELY TIMBERED, IN STRIKING CONTRAST TO THE CONDITIONS AT THE LOWER END OF THE LAKE

and which we reached early in the afternoon, several other Fish-hawks were noted and during the afternoon's ramble I caught sight of the nest of one at the top of a lofty dead pine in a grove of dead trees standing out in the deep water of the lake. Shortly afterward I saw the sitting bird fly off uttering the characteristic clear whistling cry. Being unable, however, to secure a satisfactory photograph of the nest from shore, Chase and I journeyed back to camp and later revisited the spot in a clumsy flat-bottomed boat. This, the



Fig. 23. NEST OF THE AMERICAN OSPREY AT EAGLE LAKE, SITUATED 112 FEET ABOVE THE WATER. IT CONTAINED THREE EGGS ON MAY 17, 1914

only boat we were able to procure, had been used in spearing fish and had a huge iron basket for burning pine cones suspended from a tall pole at the bow. Although the distance was short our craft was so slow that by the time the nest-tree was reached it had grown too dark for picture taking. As we came up an Osprey flew off the nest, and, as the tree in which it was situated, except for its extreme height and deadness, presented no other unusual difficulties, I decided to attempt the climb in order if possible to definitely record its con-

tents. In going up many limbs snapped without warning and it behooved me to proceed very cautiously. After a hard climb, in some respects among the most difficult and dangerous I have ever made, I reached the nest at the top of the pine 112 feet up. The huge affair, of pine boughs and twigs, about four feet across, was so situated that it was difficult to see into the nest cavity itself. After some maneuvering, however, I succeeded in getting slightly above its outer edge and in peering over, when three eggs on an almost level bed of soft green moss, mixed with pine needles and bits of wood, met my gaze. The eggs were apparently but slightly incubated, and while heavily marked were in no wise peculiar.

Next morning, accompanied by Mr. Cady, the locality was revisited and the photographs shown herewith, taken. I endeavored to get a picture of the

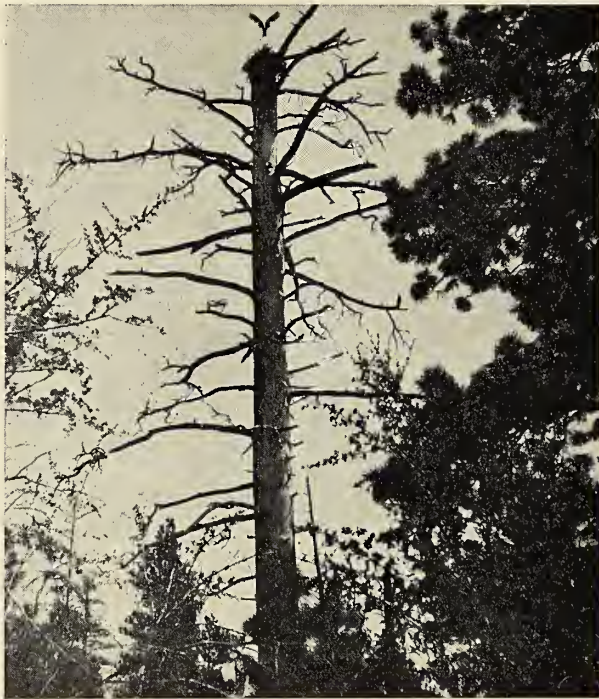


Fig. 24. THE SECOND OSPREY'S NEST FOUND. IT WAS 75 FEET UP, IN A DEAD PINE STANDING IN DEEP WATER AT THE EDGE OF AN ISLAND

bird as she returned from time to time to the nest, but in this I was not successful as the constant swaying of the boat made photography of any kind rather difficult.

Although we only rowed a short distance from Spalding's, five more occupied nests of the Osprey were noted. The lake shore here is a succession of coves and it is an interesting fact that the nests were spaced about equidistant from one another. The second nest was 75 feet up in a dead pine standing in deep water at the edge of an island. As the head of a sitting Osprey was scarcely discernible on the ground glass, the bird was roused, and while Cady and Littlejohn explored the upper end of the island, with camera set I awaited the bird's return. The picture shows the parent, with pendant legs, just dropping into the nest. At the upper end of the inlet another nest, 60

feet up at the top of a limbless dead pine, was noted and on the opposite side of the cove two more were seen in similar situations 50 feet and 35 feet up, respectively. A photograph is shown of the latter nest, and it well illustrates the construction and situation of the other two.

Crossing a narrow neck of land I came to a second cove and although I went but a few hundred feet I came to another nest 50 feet up. This, like all others, was in a dead pine and similar in situation to the second nest found. If the balance of the timbered coves on the lower end of Eagle Lake harbor



Fig. 25. THE FIFTH OSPREY'S NEST FOUND. IT WAS BUT 35 FEET ABOVE THE WATER OF EAGLE LAKE

as many homes of the Osprey as do those near Spalding the number of these birds in the region must be surprisingly large, and as this, so far as I know, is the only definite inland breeding area in California, it becomes a point of particular interest and deserving of especial protection from hunters who usually regard all Raptores with disfavor. The Eagle Lake region at present is very sparsely populated and I was particularly impressed with the distinctly primeval conditions of its birdlife, the great tree colonies of Great Blue Herons

(*Ardca herodias herodias*) and Farallon Cormorants (*Phalacrocorax auritus albociliatus*); the vast ground colonies of American White Pelicans (*Pelecanus erythrorhynchos*); its settlements of California Gulls (*Larus californicus*); and most of all, and long to be remembered, the wild-erying Ospreys in the great forests of virgin timber, and their huge nests in the lofty dead pines.

San Francisco, California, December 15, 1914.

NOTES ON MURRELETS AND PETRELS

By ADRIAAN VAN ROSSEM

WITH ONE PHOTO BY L. HUEY AND TWO PHOTOS BY A. HILLER

THOUGH the primary object of this paper is the discussion of some fall specimens of Murrelets taken between San Diego, California, and Los Coronados Islands, Lower California, I deem it advisable to incorporate



Fig. 26. SPECIMENS OF *Brachyramphus hypoleucus* (NO. 1) AND *B. craveri* (NOS. 2-7), SHOWING COLOR OF WING-LININGS

also some notes on the Black and Socorro Petrels which breed on the Coronados in company with the Xantus Murrelet and have also been more or less closely associated with it in much of the recent literature on the Islands.

When on August 13 of the present year Mr. Laurence Huey and the writer made a flying trip to Los Coronados with a view to collecting a series of young petrels, seven murrelets were taken in the channel about midway between San Diego and the Islands. Of these, one is unmistakably *Brachyramphus hypoleucus*, while the others, after careful attention to the distinguishing characteristics as given by Mr. William Brewster in his "Birds of the Cape Region of Lower California", I have no alternative but to label *Brachyramphus craveri*.

The accompanying illustration (fig. 26) shows very nicely the distinction

between the two species so far as the under wing-coverts are concerned. It is hardly fair, however, to use no. 1 as *typifying hypoleucus*, as it has the darkest wing lining I have ever seen out of a hundred odd birds handled in the flesh. Typical specimens with the wing lining immaculate are, on the Coronados at least, decidedly in the minority, most of the birds having concealed dusky bases to the feathers. In a dried skin this condition is not readily discernible, which may be the cause of the general belief that *hypoleucus* always has immaculate under wing-coverts. The unusual degree of clouding

in the figured specimen is probably by reason of the immaturity of the bird. The coloration of the wing linings of nos. 2-7 inclusive may be briefly described as a mottling of smoky brown, dark ashy and seal brown on a grayish white ground, except for the irregular spot near the base of the wing which is pure white.

Of the specimens shown, nos. 2, 3, 6 and 7 are adults, and nos. 1, 4 and 5, birds of the year. However, as all have completed the fall moult (except for a few old summer feathers as noted farther on) it seems permissible to use adults and young alike for purposes of comparison. Using, then, no. 1 as representing *B. hypoleucus* and nos. 2-7 inclusive as examples of *B. craveri*, the following constant dissimilarities (exclusive of the under wing-coverts) will readily be observed. The upper parts of the two species at first glance appear identical in shade and luster. Closer examination, however, shows *craveri* to be slightly but noticeably duller and browner on the sides of the face, neck



Fig. 27. SPRING (LEFT) AND FALL (RIGHT) SPECIMENS of *Brachyramphus hypoleucus*

and body; moreover the dorsal plumage on being disarranged shows a decided brownish tendency, though this is obscured by the lighter tipping which is the same clear slate as in *hypoleucus*. The latter exhibits leanings in the same direction but in a much less degree, the brownish tinge being almost unnoticeable. A few old feathers still remaining unshed along the edge of the wing and on the shoulders of the adults would indicate beyond a doubt that the summer

plumage of these specimens was very different from that of *B. hypoleucus*, these feathers being of a shade about intermediate between hair brown and seal brown. In this regard it may be appropriate to mention that I have never seen any breeding specimens of *hypoleucus* that are clear slaty. A slight brownish cast is apparently always present, most decided on the wing quills and tips of the scapulars though the whole dorsal plumage is slightly suffused particularly in the more worn specimens. In the case of nos. 2-7 the unicolored feathers on the sides of the body and flanks greatly outnumber the variegated ones, while with *hypoleucus* the exact opposite is the case. The general effect is much the same, in other words in both species the parts mentioned have a mottled appearance, but from a different cause. An individual feather in the case of *craveri* is, when followed up, usually found to be either dusky or white, and the mottling results from the intermingling of these feathers, but in *hypoleucus* the same effect is obtained (generally speaking) by reason of the individual plume being bicolored.

Aside from the smaller feet and bills no differences are discernible between the two birds of the year and the four adults (of *B. craveri*) except a more blackish cast to the dorsal plumage apparently by reason of the tipping being of a slightly darker shade. Figure 27 will give a good idea of the difference in shade between the breeding and fall plumage of Xantus Murrelet.

To sum up the situation, nos. 2-7 may be referred to *B. craveri* for the following reasons:

<i>B. hypoleucus</i>	<i>B. craveri</i>
Wing lining immaculate or nearly so.	Wing lining heavily clouded and mottled.
Concealed portions of dorsal plumage with faint brownish cast.	Concealed portions of dorsal plumage with strong brownish cast.
Side of head, neck and body blackish slate.	Sides of head, neck and body brownish slate.
Unicolored feathers on sides of body in minority.	Unicolored feathers on sides of body in majority.
Worn summer feathers light slaty with faint brownish suffusion.	Worn summer feathers about intermediate between hair brown and seal brown.

The petrel colony on Los Coronados is, I am happy to state, apparently gaining in numbers each year. Messrs. Grinnell and Daggett on their visit to the Islands, August 6 and 7, 1902 (Auk, XX, 1903, pp. 27-37) make no estimate of the numbers of either Socorro (*Oceanodroma socorroensis*) or Black (*Oceanodroma melania*) petrels breeding there at that time, but state that twenty-four adults of the former and four of the latter species together with many young and eggs were taken in an afternoon's hard work. From what I have seen there the present season, it would now be rather a simple matter for two persons to obtain upwards of fifty adult Socorro Petrels in the same length of time on the same date. This refers to the main colony; but small branch colonies have sprung up wherever sufficient soil is available to burrow in. In many instances this year no burrow at all was dug, the birds simply worming their way under the dense bushes to lay their eggs.

Another matter of surprise to me is the fact that Messrs. Grinnell and Daggett found *socorroensis* breeding on North Island, a condition which is certainly non-existent at the present time, though *melania* nests there in considerable numbers. Possibly the hordes of Cassin Auklets (*Ptychoramphus aleuticus*) which infest the island in the breeding season, as well as a mouse (*Peromyscus* sp.) which also abounds there, have at last driven *socorroensis* to take refuge on the smaller Middle Island, which place now seems to be their sole

breeding ground on the islands. Just why the Socorro Petrel should be forced out by the above mentioned vermin (*if* such be the case), while the Black Petrel persists in abundance, is a question which for the present must remain unanswered.

Black Petrels nest on all of the group with the exception of South Island and in aggregate numbers probably exceed the Socorros, though their habit of nesting in isolated pairs or at best small scattered colonies renders them much more difficult to obtain. Another factor which adds to the difficulty of collecting them is that very frequently the nesting site is under some great boulder or in a narrow, inaccessible crevice in a rock wall. I am morally certain that, on these islands at least, although the Black Petrels occasionally do use burrows, these are not excavated by the birds themselves, but are merely abandoned ones of Socorro Petrel or Cassin Auklet. The normal site is a nat-

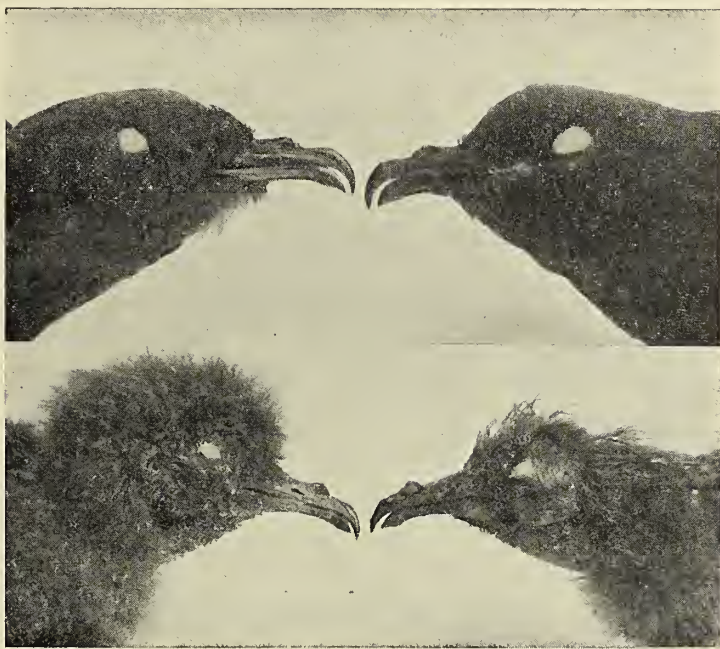


Fig. 28. ADULT AND YOUNG PETRELS: *Oceanodroma socorroensis* AT LEFT; *O. melania* AT RIGHT. THE LARGER SIZE OF THE BILL OF THE LATTER IS EVIDENT, EVEN IN THE YOUNG

ural one, such as a cranny in a rocky wall, beneath misplaced slabs of rock, in dark caves, or even under heavy bushes, sharing this last situation with *socorroensis*, birds of each species sometimes being found within a few inches of each other.

The young of these two petrels are very similar in appearance. When first hatched the bills, tarsi and feet are a dirty pinkish, gradually darkening as the birds grow older till by the time they are the age of those figured (about two weeks) the parts mentioned are the solid, shiny black of the adults. Even in newly hatched chicks the difference in bills is plainly visible (see fig. 28), and no difficulty should be experienced in distinguishing the young even in the field should a young Black Petrel be taken from a Socorro burrow. The natal down is at first a light smoky gray, changing as the bird develops to

dark, almost blackish, smoky gray, possibly from continued contact with the dark peaty soil, though I am inclined to believe the change a natural one. In *melania* this down is a shade lighter than in *socorroensis*, which strikes one as rather peculiar considering that in later life *melania* is the darker of the two.

As for the great variation in the amount of white (or total absence of it) to be found on the rump of *socorroensis*, I prefer to leave that point to others infinitely more competent to discuss it than I am. However, it may be mentioned that earlier in the season (late June, 1913) the majority of birds showed at least a trace of white, while of those taken August 13 of the present year only about one in four showed the above mentioned character.

Pasadena, California, September 10, 1914.

BIRDS OF A BERKELEY HILLSIDE

By AMELIA SANBORN ALLEN

WITH FOURTEEN PHOTOGRAPHS ON SEVEN FIGURES

FOR the past three years I have been living in Strawberry Canyon. Our house is in the middle of a dense grove of young live-oak trees, on the southern wall of the canyon opposite the University dairy, and to the



Fig. 29. GENERAL VIEW OF STRAWBERRY CANYON LOOKING EAST, SHOWING THE LOCATION OF THE HOUSE (UPPERMOST) AND ITS SURROUNDINGS

Photo by Amelia S. Allen

south and west of the swimming pool. The house faces south and up the hill. To the west are three unimproved lots, one of woodland, the others partly open, with several rather large pine trees. To the north and east the oak forest is continuous, interspersed with bay trees; and there is a dense undergrowth of hazel, cascara, poison oak, spiraea, wild rose, snow-berry, wild currant, blackberry and brakes, with thimble-berries and wild parsnip filling the cross ravines. On the eastern side, our lot is bounded by the University cam-

pus, where no shooting is allowed at any season. On the hill-slope above us, to the south, are only a few scattering oak trees, but there is an almost impenetrable thicket of spiraea and hazel brush, protected by a high bank formed by the cut for the road, which makes an ideal nesting site for the birds.

The hill as it slopes to the west, outside the canyon, is covered by an old orchard and some garden shrubs, with one date-palm and a group of pine and eypress trees on the terrace which overlooks the city and the Golden Gate.

From the whole of the region described the English Sparrows are absent except as fall gormandizers. During September, October and November, thousands of them come up from the town below into the old orchard, where they feed on weed seeds and remnants of the scant crop of the diseased trees. Occasional reconnoitering parties have appeared in the spring-time about our house, but they have not met with a hospitable reception.

The birds of this hillside region fall naturally into two groups: (1) those found more commonly in the orchard and on the more or less open slope to



Fig. 30. GOLDEN-CROWNED SPARROWS. AT THE LEFT IS SHOWN ONE ON THE RAILING; AT THE RIGHT THREE GOLDEN-CROWNS AND ONE SONG SPARROW (ABOVE ON TWIG)

Photo at left by Amelia S. Allen; at right by T. I. Storer.

the west; and (2) those which show a decided preference for the closely forested and brush-covered area of the north-facing slope immediately about the house. A small number seem equally at home in both sections, as, for example, the Red-shafted Flicker, California Blue Jay, California Towhee and Hermit Thrush.

The raptorial birds of the western group include the Sparrow Hawk (*Falco sparverius sparverius*), which is almost always to be found in the winter season surveying the field from the top of one of two telephone poles, upon which it elects to perch. Western Red-tailed Hawks (*Buteo borealis calurus*) soar above in the illimitable blue on wings of strength. While at night the three owls (*Aluco pratineola*, *Otus asio bendirci*, *Bubo virginianus pacificus*) make the darkness visible by their cries.

The Anna Hummingbird (*Calypte anna*) knows everything that happens in the whole area the year around, and every summer the Allen Hummingbird (*Selasphorus alleni*) guards its nest from the same lookout on the same electric-

wire. I suspect the cypress-trees across the way of harboring the tiny nest. If so, I hope that it has been as safe from hawks and jays as from any intrusion on my part.

The only flycatchers I have noticed in the western tract are the Black Phoebe (*Sayornis nigricans*) and the Say Phoebe (*Sayornis sayus*). The Black Phoebe often makes its presence known by its call, but I seldom hear an answering call. One spring day, however, I surprised two indulging in courtship antics. The Say Phoebe was noticed once in the winter of 1912-13, and has been seen repeatedly this winter.

The Flickers (*Colaptes cafer collaris*) and Jays (principally *Aphelocoma californica californica*) are continually flaunting their bright colors in the cypress and red-wood trees. Occasionally a Varied Thrush (*Ixoreus naevius naevius*), in its quiet dignity, puts them both to shame.

A few Meadowlarks (*Sturnella neglecta*) still nest in the old orchard, but encroaching civilization has driven most of them to the other side of the canyon.

Many of the members of the sparrow family seem to choose the western area, either for winter feeding or summer breeding. In the winter of 1912-13, Mosswood Road was being graded and macadamized. This of course meant that men and horses were taking their noonday meal there; and afterward a feast of bread-crumbs and grain was left for the birds to enjoy. The little Rufous-crowned Sparrows (*Aimophila ruficeps*) from the canyon to the south joined the Intermediate (*Zonotrichia leucophrys gambeli*) and Nuttall Sparrows (*Z. l. nuttalli*) at mealtime. Add to these three species a stray Harris Sparrow (*Z. querula*), which seems to have come with his cousins from the north to enjoy a California winter—could a bird-lover ask for a more interesting group to study? In the old orchard trees, the Linnets (*Carpodacus mexicanus frontalis*), Green-backed Goldfinches (*Astragalinus psaltria hesperophilus*), Black-headed Grosbeaks (*Zamelodia melanocephala capitalis*), and a Lazuli Bunting (*Passerina amoena*) fill the summer air with rapturous song. A few ornamental olive trees with fruit ungarnered assure Purple Finches (*Carpodacus purpureus californicus*) all the year. Their spring sunset song, from the top of the tallest cypress tree, certainly evens up the account for the whole olive crop. Flocks of Pine Siskins (*Spinus pinus pinus*) circle from weed patches to pine trees, while Sierra Juncos (*Junco oreganus thurberi*) feed on the rag-weed under the cypress trees and the chick-weed under the oaks. Both the California and San Francisco Towhees (*Pipilo crissalis crissalis* and *P. maculatus falcifer*) range over the whole hillside, the latter being more numerous in the oak forest.

One of the few remaining colonies of Cliff Swallows (*Petrochelidon lunifrons lunifrons*) in Berkeley still nests at the top of the western slope. Their main source for nest-building material has been destroyed this winter; and unless another unknown base can be developed or an artificial one substituted, we may miss their circling flight next summer.

During the winter months Audubon Warblers (*Dendroica auduboni auduboni*) abound in the old orchard. Nuthatches (*Sitta canadensis*) sound their reeds in the pines and oaks. Ruby-crowned Kinglets (*Regulus calendula cinereus*) chatter and sing and glean through the trees, and the Hermit Thrush (*Hylocichla guttata nanus*) makes himself a familiar garden companion.

In the summer-time two pairs of House Wrens (*Troglodytes aedon parkmani*) do enthusiastic housekeeping behind the shingles of hillside cottages. Vigors Wrens (*Thryomanes bewicki spilurus*), Bush-tits (*Psaltiriparus minimus minimus*), and Wren-tits (*Chamaea fasciata fasciata*) are permanent residents.

The second group of hillside birds, those which choose the environment of the dense oak forest in the midst of which we built our house, have been the source of great pleasure to us and to our friends. A very little effort on our part has brought abundant returns, as the following paragraphs will prove.

The hill slopes in a very convenient way in front of a large window, and there we have built a rough drinking-fountain with a few bricks and cement-mortar. This was accidentally made quite after the approved plan, being off level just enough so that the water varies in depth from half an inch to two inches. On the ground between the drinking-fountain and the window, during the winter months, I throw out crumbs and apple-skins, and on the porch-railing, which is about four feet from the window, I scatter canary-seed and crumbs. I would limit the feeding-space to the railing, were it not for the rabbits which watch the birds with longing eyes when there is no food on the ground. I have not yet made a practice of putting out food to attract the

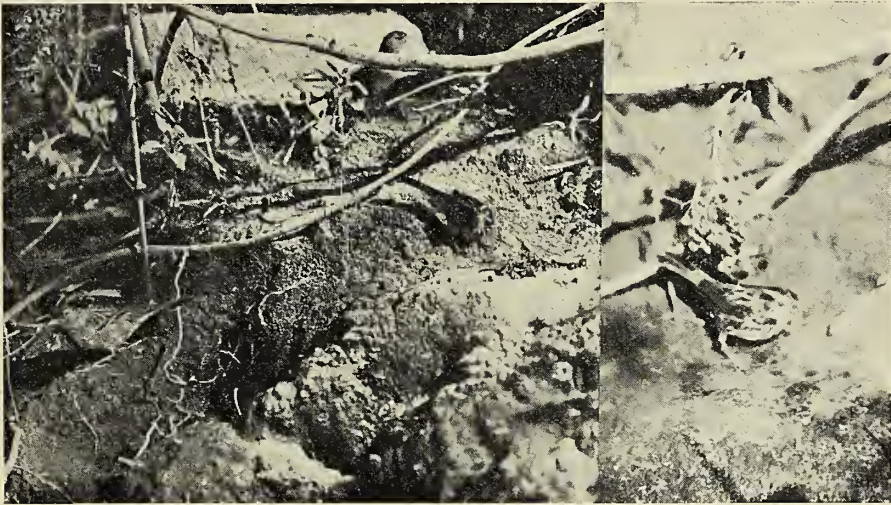


Fig. 31. SANTA CRUZ SONG SPARROWS FEEDING ON CANARY SEED. THE STRIPES ON THE HEAD AND SPOTS ON THE BREAST, AS WELL AS THEIR SMALLER SIZE, DISTINGUISH THEM FROM THE GOLDEN-CROWNED SPARROW WHICH APPEARS IN THE LEFT-HAND PICTURE

Photo at left by T. I. Storer; at right by Amelia S. Allen.

insect-eating birds. In 1911 the trees were suffering terribly from the ravages of the green cut-worm. The University sprayed a few of the trees; a long-handled broom destroyed the myriad cocoons, which were formed under the edges of the shingles and on the tree-trunks; and the birds did the rest. This winter the trees are in excellent condition.

Quail (*Lophortyx californica californica*), of course, are very abundant, and very tame. One of their favorite roosts in the summer-time is in a tree which had to be cut away in part to make room for the house. In the hot October days an entire brood took their noonday siesta in and about the drinking fountain.

One evening we were surprised by a visit from a Barn Owl which came down through the chimney, Santa Claus fashion. He attempted to alight on some oak branches which adorned the mantel, but found that they would not support his weight. He then chose the top of a door, flew from that on to a

curtain-rod, then to a window-sill on the opposite side of the room, and out to freedom through an open door, all without breaking any of the bric-a-brac.

With the exception of the Red-shafted Flicker, woodpeckers are not abundant, one each of the Nuttall (*Dryobates nuttalli*) and the California (*Meclanerpes formicivorus bairdi*) having been seen from the window.

Of the flycatcher group, the Black Phoebe makes itself heard constantly from the direction of the swimming pool; the Western Flycatcher (*Empidonax difficilis difficilis*) is present from the first of April until after the first of October; the Olive-sided Flycatcher (*Nuttallornis borealis*) was often heard from a favorite perch at the end of the road during the summer of 1913, but did not return to us last year.

I anticipated that the California Blue Jays would give some trouble about the feeding ground, but their behavior so far has not been very objectionable. They appear only when I put out rather large pieces of bread, which they carry off and bury. They seldom attack the other birds, perhaps because it is not necessary; for they are so noisy and blustering that the smaller birds

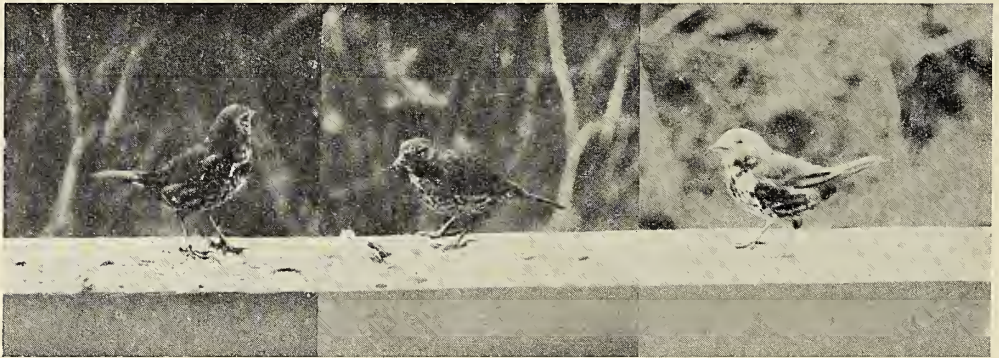


Fig. 32. YAKUTAT FOX SPARROWS ON THE PORCH RAILING. THE PECTORAL BLOTCH SHOWS DISTINCTLY IN THE LEFT-HAND PICTURE. THE SHORT, THICK BILL, SHORT LEGS, STOCKY BUILD, AND GENERAL BELLIGERENT ATTITUDE DISTINGUISH IT FROM THE THRUSH
Photos by Amelia S. Allen.

naturally make way for them. The rabbits and the Thrashers, however, hold their own with them, the former even coming to blows with the jays at times. The Steller Jays (*Cyanocitta stelleri carbonacea*) make themselves heard constantly from the neighborhood of the dairy, but I have seen them from the window only twice.

The Golden-crowned Sparrows (*Zonotrichia coronata*) take the prize for percentage of increase on the feeding-ground. The first winter (1911) only one appeared daily. This year seven come regularly, four being birds of the year. The Sierra Juncos in other seasons have been commonly seen about the garden, especially in the patches of chickweed under the trees. They seemingly are not attracted by the bill of fare offered on the feeding-ground, but often come to bathe. The Santa Cruz Song Sparrow (*Melospiza melodia sanctacruensis*) is an ever-present guest. It eats as long as there is a crumb to be found, and bathes repeatedly as long as the supply of water lasts. Recently a Rusty Song Sparrow (*Melospiza melodia morphna*) has appeared daily. The Fox Sparrow (*Passercella iliaca meruloides*) is a regular and rather belligerent patron of the lunch-counter. Either crumbs or seeds suit its taste, and it

shows no more fear than do the other sparrows about coming to the porch railing for food. The habit of scratching for its food seems to be so firmly fixed that it usually scratches among the crumbs before picking them up. The California Brown Towhee is never missing at meal-time, and is ready with a protest, if meals are not on time. Of the Brown Towhees there are seldom more than two on the feeding-ground, while of the San Francisco Towhees there are more often four. In the late summer, the San Francisco Towhees brought their young up onto the railing to feed. But they are still the wild birds of the species, and take alarm at the slightest movement of a window or curtain.

I often see Hutton Vireos (*Vireo huttoni huttoni*) in the oak trees and occasionally about the drinking fountain, particularly in October and November. The Warbling Vireo (*Vireosylva gilva swainsoni*) nests down nearer the bottom of the canyon. The Lutescent Warblers (*Vermivora celata lutescens*) are very abundant during the summer. There must be from four to six pairs nesting within a hundred yards of the house each year. It would be difficult

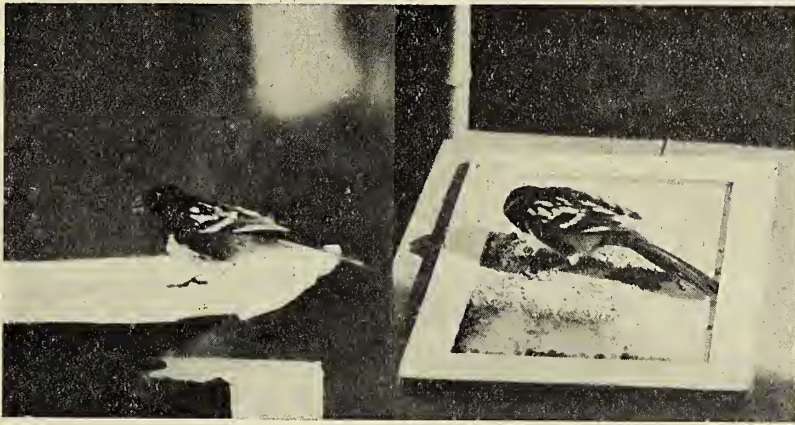


Fig. 33. THE SAN FRANCISCO TOWHEE FEEDING ON CANARY SEED. NOTE THE BLACK CHEST CONTRASTING WITH THE GRAY BREAST. THE LEFT HAND PICTURE SHOWS THE IRIS RING, WHICH WAS BRIGHT RED IN COLOR

Photos by Amelia S. Allen.

to calculate their value. Five cut-worms in five minutes was the estimate I made as I watched one last summer. A flock of Black-throated Gray Warblers (*Dendroica nigrescens*) was seen in the fall of 1912 in company with many warbling vireos. They remained for several days. The Townsend Warblers (*Dendroica townsendi*) I see only occasionally from the windows. Just before they migrated last spring, they were present in numbers in the oaks on the hillside above us, and were in full song. With them were kinglets and juncos. The MacGillivray Warbler (*Oporornis tolmiei*) was seen and heard just beyond the end of Mosswood Road last summer. One pair of Pileolated Warblers (*Wilsonia pusilla pileolata*) has nested each season about a hundred yards east of the house.

The California Thrasher (*Toxostoma redivivum redivivum*) has been one of the most interesting of the birds that have come regularly to the feeding-ground. There is nothing leisurely about him, and he is certainly not a "Fletcherite". I felt quite triumphant when he, too, came to the railing for

food. He is so fond of California holly-berries, that he flew against the window twice one morning, in his effort to reach a bunch in a vase within.

A pair of Vigors Wrens (*Thryomanes bewicki spilurus*) have nested about the house each year. This year the nest was under the edge of a tarpaulin which covered the water-tank. They raised five young. I sat down at the bottom of the tank one day when the young were being fed, to see if they would become accustomed to my presence. The female readily adapted herself to the situation, but she had to give very peremptory orders to her spouse, before he could be induced to bring his worms to the door-way and deliver them to her.

The Plain Titmouse (*Bacolophus inornatus inornatus*) I see and hear very often. The Wren-tit is perhaps the least suspicious bird on the feeding-ground. While the other birds wait at a distance for me to close the door after putting out the food, he comes chattering through the bushes and begins his meal. He seems ill at ease on the railing, but I believe that this is due not so much to his proximity to the window as to the fact that he has no twig to cling to. He

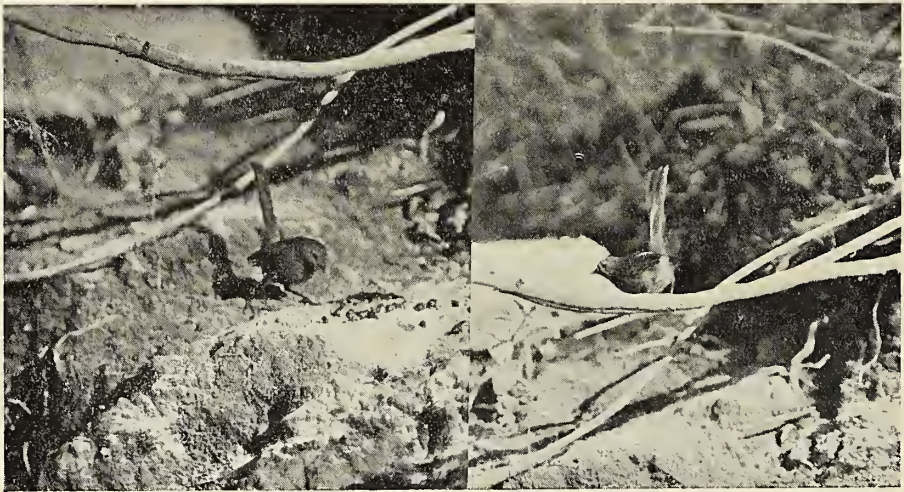


Fig. 34. INTERMEDIATE WREN-TITS. THE LONG, UP-TILTED TAIL AND THE COMPARATIVELY SHORT STRAIGHT BILL, AS WELL AS LARGER SIZE, ASSURES ONE THAT IT IS NOT A WREN

Photos by T. I. Storer.

always approaches the feeding-ground making the noise which Dr. Grinnell has likened to the sound made by rubbing together two sticks. Bush-tits are all about us. During the hot days in the fall, it is a treat to watch them about the drinking fountain. As many as can do so get into the water; the others sit in the nearest bushes awaiting their turn.

Ruby-crowned Kinglets are frequently seen and heard. Two of them come often to the drinking fountain to bathe or drink. The Golden-crowned Kinglets (*Regulus satrapa olivaceus*) appear occasionally. For three winters I have found the Western Gnatcatcher (*Poliophtila caerulea obscura*), but this year I have not heard its note.

We enjoy the song of the Russet-backed Thrush (*Hylocichla ustulata ustulata*) through the summer, while the Hermit Thrush makes itself very much at home about the house during the winter. The first year I was a little vexed when I found the Christmas wreath on the front door minus all of its

red berries, but since then I have been very careful to see that no red berries are burned. This year a kindly florist has helped out by donating several quarts of loose berries. The Robins (*Planesticus migratorius propinquus*) are never about in numbers, but I often hear their ealls from the tops of neighboring trees. The Varied Thrushes were quite numerous during the winter of 1911, a flock of them feeding daily in the wood-lot to the west of us. Since then I have seen only stragglers until this winter, when they have been more numerous.

This finishes the list, and I will add only one or two notes as to the number of birds that come regularly to feed. The best results have been obtained



Fig. 35. DWARF HERMIT THRUSH, FEEDING ON LOOSE CALIFORNIA HOLLY BERRIES IN A SAUCER. NOTE THE LONG, SLENDER LEGS, LARGE EYES, AND SLENDER BILL

Photos by Amelia S. Allen.

when they have been fed regularly about eight in the morning. The numbers increase from October to January. The maximum flocks last year consisted of two Blue Jays, two California Towhees, four San Francisco Towhees, four Song Sparrows, two to four Fox Sparrows, three Thrashers, two Wren-tits,—and three to four Brush Rabbits. This winter the totals are about as follows: two Blue Jays, two California Towhees, five San Francisco Towhees, four Fox Sparrows, four Santa Cruz Song Sparrows, one rusty Song Sparrow, seven Golden-crowned Sparrows, three Wren-tits, one Thrasher, one Hermit Thrush—and one to four Brush Rabbits.

Berkeley, California, February 11, 1915.

A FORTY ACRE BIRD CENSUS AT SACATON, ARIZONA

By M. FRENCH GILMAN

THE FORTY ACRES on which this bird census was taken in the spring and early summer of 1914, may be described in ten-acre tracts. Of the first ten acres half is devoted to an Indian Day School, which consists of school-house, dwelling and barn, to the school garden, and to an incipient orchard. There are a few young cottonwoods growing here, two umbrella and two mulberry trees, and some young grape vines, date palms and pomegranates; also a few scattered mesquite trees that were topped once and have sent up a second growth. An irrigating ditch runs through the grounds and occasionally has water in it. A horse-trough always filled with water stands in the corral, and is an attraction to the birds. In season I always have some pieces of watermelon in the shade of a young cottonwood, and many birds resort to these for refreshment. The Gila Woodpeckers in particular seem to have developed the watermelon habit to a marked degree. In the hottest weather I try to keep water in a basin hollowed out around one of the young cottonwood trees, and this furnishes drink and a bath to many species. The other half of this ten acres has been partly cleared, but has a few scattered second-growth mesquites, quite an area of salt-bush (*Atriplex polycarpa*), and several clumps of *Lycium fremonti*, or squaw-bush, as it is called locally.

The ten acres lying to the south of the tract just described is in cultivation, wheat, barley, corn and alfalfa being raised on it. Along the fences and ditches on this tract are a few mesquites, squaw-bushes, and some burro-weed (*Dondia torreyana*.) Of the ten acres west of this area about one-third is cleared and partly cultivated, one-third is covered with dense second-growth mesquite mixed with a few catsclaws (*Acacia greggii*), jujube (*Zizyphus lycioides*), *Lycium fremonti*, and three species of salt-bush, *Atriplex polycarpa*, *A. canescens* and *A. lentiformis*. The other third of the tract is sparsely covered with the same sort of growth, but with *Atriplex polycarpa* predominating. The last ten acres of the tract under observation is about the same as the last third section just described, that is, covered with a sparse growth of the plants mentioned.

The following list of nests found probably does not contain all that were occupied during the present breeding season, as I did not make a systematic search of the entire tract until late in the year, and a few of the earliest breeders may have escaped notice. Where there is reason to believe any find is a second set it is so stated.

Oxyechus vociferus. Killdeer. A nest with three eggs found on plowed ground in the school garden. The three eggs hatched and the young probably were safely raised, as I saw them at different times in fields nearby. The eggs were found about April 1, and on June 14 I found three more eggs in the same nest depression. As a Killdeer's nest is easily and quickly scratched out and made ready for occupancy there seems no particular reason for a second set in the same place, unless, from the successful outcome of the first set, the bird considered it a good safe location. Two of this set were hatched, one egg being found with a hole in it the day the young left the nest. This departure seems to take place the same day they hatch.

Lophortyx gambeli. Desert Quail. Five nests were found in the confines

of the school acreage, and one in the northwest ten acres. One of the nests was out in the open near the irrigating ditch, and had no shelter whatever. It was on the gentle slope of a small depression, and children passed near it every day on their way to school. April 7 it had seven eggs in it, and the bird continued to deposit them till May 6, when the eighteenth was in the nest. When I found the nest I was afraid the hot sun would cook the eggs, so threw down a plank in a careless manner nearby. I moved it a little nearer each day until it shaded the eggs most of the time, the old bird apparently paying no attention to the intrusion, as she kept on with the work of filling the nest with eggs. Soon after the set was complete she left the nest, or was caught or killed, as the eggs remained uncared for until May 31, when I took them. It was a job to blow them, as long exposure to the sun had hardened and dried the contents of many.

Two nests were in the school woodpile, containing nineteen and thirteen eggs, respectively. Another, in a pile of short boards and kindling about ten feet from the school woodshed, had seven eggs in it. The nest out in the fields had nine eggs, and was at the base of a Lycium bush. About the middle of June I put some straw in an old nail keg, open at one end, and placed it on its side in the forks of a mesquite tree about two feet from the ground. The mesquite had some saplings starting from the trunk that sheltered the keg. June 24 I found that a quail had moved in and had laid two eggs. Later she completed the set, only eight eggs, and successfully hatched all but one. She was quite tame on the nest, and would not be scared off by any mild measures. I tried hammering on the rear of the keg, rolling it gently and talking to her, requesting her to get off and let me count the eggs, but unless I put in my hand at the front of the keg she sat pat.

***Zenaidura macroura marginella*.** Western Mourning Dove. Eleven Mourning Dove's nests were found in the limits of the forty acres. Eight were in mesquites, two in Zizyphus and one in a catsclaw bush. The average height was seven feet. The latest date was July 23, when two nests were found, one with fresh eggs, the other with eggs about half incubated.

***Melopelia asiatica trudeaui*.** White-winged Dove. One nest with young was found, and this a few feet outside the limits of the forty acres, though many of the birds fed over the tract. The absence of large mesquite trees was the reason for the lack of nests, as these birds seem to prefer to build higher up in the trees than do the Mourning Doves. Both species frequent the school yard, the Mourning Doves to eat the weed and flower seeds, particularly those of the California poppy, and the White-wings to eat the watermelon I put in the back yard for them.

***Scardafella inca*.** Inca Dove. A brood was raised in a mesquite tree not far from the house, and a second set laid in the same nest June 21. A few days later the eggs disappeared. These little birds frequent houses and yards, but seem slow to come around a new establishment. The house here has been built three years, this being the fourth summer, and the birds have just adopted it. Last summer a pair came and looked it over, staying a few days, and this year they settled here.

***Geococcyx californianus*.** Roadrunner. A nest with four young nearly grown was found on June 7, in a mesquite about five feet from the ground. When I looked into it two of the birds jumped from the nest, and would not stay when put back. The others remained, as they were smaller. Another

nest was found July 11 a few rods away, also in a mesquite, and seven feet from the ground. This nest contained four eggs partly incubated, of which one hatched July 20, the others on the three succeeding days. This would indicate that the bird starts incubating with the first egg. The mother was very anxious about the eggs, and ran around close to me in a mammalian sort of way, flat on the ground, tail dragging, and head stretched out in front only about three inches from the soil. She did not look like a bird at all, and though making no fluttering demonstration, her antics were calculated to excite curiosity and distract attention from the nest. This nest may have been the second set of the owners of the first one found.

Chordeiles acutipennis texensis. Texas Nighthawk. A pair of these birds was flushed in a certain location each trip I made, but no nest could be found. The place was not favorable for finding the eggs, and I firmly believe the birds were nesting there.

Tyrannus verticalis. Western Kingbird. A nest with two eggs in top of mesquite about fifteen feet from the ground. Another with three eggs in young cottonwood tree only eighteen feet from our back door. The location, in the forks of the tree about eleven feet from the ground, was not favorable for nest-building and the wind kept blowing it down until I fastened a few wires for a support. Then a Bendire Thrasher came and tried to take the site away from the Kingbirds. The Thrasher would bring some nesting material, and settle down in the nest. Then the Kingbirds would appear, scolding and trying to drive her away. As long as they kept flying at her she stayed on the nest, but if one came close and alighted she would fluff out her feathers and make a vicious dive at him, or her, as it might be. Had her mate been as much on the job the Kingbirds would have lost out, but he sang and did nothing else, so she finally gave it up, and the Kingbirds raised three young.

Molothrus ater obscurus. Dwarf Cowbird. Two eggs found in the nest of a Plumbeous Gnatcatcher in a Zizyphus bush. Many of the Cowbirds stayed in the barnyard and ate watermelon in our back yard, but they had to search farther afield for more Gnatcatcher's nests.

Agelaius phoeniceus sonoriensis. Sonora Red-winged Blackbird. A pair built a nest in a clump of mesquites at the edge of an alfalfa field, but deserted it, probably to join a small colony nesting in some willows along an irrigating ditch about a quarter of a mile distant.

Icterus bullocki. Bullock Oriole. One nested in a young cottonwood near the house and raised four young. Another had a nest with three eggs about nine feet up in a Zizyphus shrub. Two others were in mesquite trees, eight and fifteen feet from the ground, respectively, and contained four eggs each.

Pipilo aberti. Abert Towhee. Eight nests found, with two and three eggs to the set. Three nests were in mesquites, two in *Dondia* bushes, two in *Zizyphus* shrubs, and one in an umbrella tree. The average height from the ground was five and one half feet. One nest was empty, with a blacksnake coiled round it, and the birds in distress nearby. I tried to secure the snake in order to determine how many eggs or young the nest had contained, but he escaped. The latest date was July 23, when three eggs partly incubated were found. This late set may have been a second one.

Cardinalis cardinalis superbus. Arizona Cardinal. A Cardinal raised three young in a mesquite in the dense growth already described, and later, July 1, built another nest and started incubating on two eggs. I watched to

see how long incubating would take, but at about the time the young were due one egg disappeared, while the other had a hole in it and proved infertile. This pair of birds has frequented the yard for two years, and has become quite friendly, coming to a bird table for food and eating the watermelon I put out in the shade. They brought the three young ones to the house and gave them watermelon until they learned to feed themselves.

Phainopepla nitens. Phainopepla. A pair had a nest in a mesquite near the west line of the tract, where they raised two young. They nest most frequently in the old growth of mesquites that have much mistletoe growing in them.

Lanius ludovicianus excubitorides. White-rumped Shrike. A pair raised five young in a squaw-bush along one of the fences. In a mesquite tree not far away I found the hind legs of a young rabbit hung over a thorny branch, but the Shrikes may not have been responsible for this!

Mimus polyglottos leucopterus. Western Mockingbird. A pair raised a brood in the mesquite thicket but I did not find the nest till the young birds had flown. The old ones brought them up around the house for refreshments later, and then probably went to work on a second set, as I found a nest with two eggs July 7 not far from the first one. As it happened, however, this was about fifty yards outside the lines so cannot be counted.

Toxostoma bendirei. Bendire Thrasher. Eight nests were found with three eggs each. Seven were in mesquites and one in a Lycium, the average height from the ground being eight feet. One pair built a nest in a mesquite at the bottom of the date grove and hatched three young, these leaving the nest about the first of May. The 15th of May the female began fighting the Kingbird for the nesting site as I have already related. After the Kingbirds drove her away she went to her old nest in the mesquite and raised three more young in it, the young leaving the nest July 6. At this date of writing she has another nest in the same tree a few feet from the twice used one, and is incubating three more eggs. She is surely some "mother in Israel". As the other five nests were not close together, possibly none of them were "repeaters". There is one exception that may have been a second set as it was found so late, July 11, though not near any other found before.

The Bendire Thrasher is one bird that from all indications takes kindly to settlement. These birds nest near houses, on which they perch to sing, come into the yards, and seem fearless if not molested. If their natural shelter is cleared up they take kindly to artificial or planted growth and I believe will persist in the face of civilization. All this, of course, provided that they receive some measure of protection and encouragement.

Toxostoma crissale. Crissal Thrasher. Only three nests found, and one of those probably a second set. All were in mesquites at an average height of four feet. This Thrasher is a bird of the underbrush and thickets, and apparently does not take kindly to clearing and farming operations.

Heleodytes brunneicapillus couesi. Cactus Wren. February 15 was the date when the first nest, with four eggs, was found. This was in a brush shed alongside of the school house, used as an outside class room. The rafters were double, about four inches apart, and I had inserted short boards making a horizontal space about ten inches deep and six feet from the ground. Four roosting nests had been built last fall by the pair of wrens, and February 15 a new nest contained eggs. About the last of April the same pair built a nest on

a board wired in a corner under the floor of a water-tank tower about twenty feet high. The pair of Kingbirds before mentioned as having trouble with the Thrasher, tried to take the nest away from the Wrens, but the owners were too persistent and they gave it up. Last year the Wrens had raised a brood in the same place; after the young had left I tore the nest out and the Kingbirds raised a brood. Hence both factions had some rights, the Wrens the prior right, however, which they made good. Four young were raised here, and on July 8 they were started on another set of four. After the first brood had flown from the tank I removed the old nest, and they soon rebuilt. Three eggs of this set hatched, the fourth being infertile. I might say that last year after the young Kingbirds had left the nest, the Wrens built again and incubated four eggs for three weeks. I then decided that the eggs were infertile, which proved to be the case. Besides the three nests of this pair of Wrens, five others were found, four in mesquite trees and one in a Zizyphus.

Auriparus flaviceps flaviceps. Verdin. Three nests in the mesquite thicket, two in Zizyphus shrubs, and one in a mesquite. They seem to breed usually but once a year, though there may be exceptions.

Polioptila plumbea. Plumbeous Gnatcatcher. One nest in a Zizyphus five feet from the ground, with two Gnatcatcher's and two Dwarf Cowbird's eggs.

A total of sixty-six sets was found on the forty acres, representing eighteen species; this not counting the pair of Redwinged Blackbirds which deserted their nest, the Texas Nighthawk of which the nest was not found, nor the White-winged Dove, just out of bounds.

Sacaton, Arizona, July 25, 1914.

SOME PARK COUNTY, COLORADO, BIRD NOTES

By EDWARD R. WARREN

WITH TWO PHOTOS BY THE AUTHOR

I SPENT the last two weeks of September, 1914, in the western part of Park County, Colorado, collecting mostly mammals but some birds also, and the notes I made in a comparatively little known portion of the State, and at a season when the migratory movements are on, seem sufficiently interesting to be published.

Park County covers the geographical center of Colorado, comprises the well known South Park, and is bounded on the west by high mountain ranges. The place which I made my headquarters, with the exception of the first two days, was Alma, one of the oldest mining camps in the State, at an elevation of 10,235 feet. The first two days were spent at Fairplay, also an old mining camp and the county seat, its altitude being 9,900 feet. It was not very favorably situated for the work I wished to do, therefore I moved to Alma, five miles above, and spent the remainder of my time there.

To reach these places I took the South Park Railroad, a narrow gauge, from Denver, going up the South Platte River 29 miles, then up the North Fork of the South Platte 40 miles farther to Webster, then climbing Kenosha

Hill and dropping down into the South Park at Jefferson. At Como, a few miles beyond, I changed to a train consisting of an engine and a combination coach and baggage car. Sometimes they take a freight car or two along, but not always. The principal crop in the South Park is hay, and the meadows were full of stacks. From Como to Fairplay the road passes most of the way by these fields.

Fairplay is on the South Platte River, the same stream up which I had started from Denver, but here I was close to its head; the town is not very near to the mountains. The first day I was there I walked over to Beaver Creek, a tributary of the Platte, running nearly parallel to it on the easterly side of a low ridge which separates the two streams. I followed this stream up a short



Fig. 36. MT. BROSS AND MT. LINCOLN, FROM SILVERHEELS. (BROSS IS THE ROUNDED MOUNTAIN IN CENTER, AND LINCOLN THE SHARPER PEAK NEXT ON THE RIGHT.) BEAVER CREEK AND BEAVER RIDGE IN FOREGROUND. SOUTH PLATTE RIVER IS BETWEEN BROSS AND LINCOLN AND BEAVER RIDGE. ALMA IS AT FOOT OF MT. BROSS, NEAR LEFT HAND SIDE OF PICTURE, OUT OF SIGHT BEHIND THE RIDGE

distance and then went to above timber-line on Mt. Silverheels, altogether some eight miles and back. My second day at Fairplay was spent closer to the town.

Alma is also situated by the South Platte River, here not a large stream, as it is but a few miles to its source, and Buckskin Creek flows through the town to the river. Mosquito Creek and Gulch are to the southwest over a low divide. The town is at the foot of Mount Bross, which is 14,100 feet high, with Mount Lincoln just beyond, and a couple of hundred feet higher. It is easy to reach high altitudes in the mountains here, which makes it an excellent place to study the life of such regions.

The life zones represented are the Canadian, Hudsonian, and Arctic-

Alpine. Only the upper portion of the first mentioned is represented. A very characteristic tree is the foxtail pine, *Pinus aristata*, which seems to be much more common at timber-line than the Engelmann spruce, though the latter grows on the mountain slopes. The pine is also common on the hills in the adjacent portion of the South Park away from the mountains proper. Lodgepole pines, *Pinus murrayana*, were also common, largely, I think, as second growth after the destruction of the first forest. Along the streams was the Colorado or blue spruce, *Picea pungens*, but not showing the blue color of the foliage as strongly as at lower altitudes. I doubt if it grew above 10,400 feet.

I had a distinguished predecessor in field work in this region in the person of Dr. J. A. Allen, who spent the week from July 19 to 26, 1871, at Montgomery, several miles above Alma, at the northeast base of Mt. Lincoln, practically at the source of the South Platte, with a party from the Museum of Comparative Zoology, Harvard College. Montgomery is now practically deserted, a very few people living there. Dr. Allen gives a list of 36 species found by him while there. Curiously enough the present list also includes 36 species, but no less than 16 of these were not noted by Allen at Montgomery, one, the House Sparrow, because it had not yet traveled that far west, in fact was hardly known in the East at that date. Another, the Pink-sided Junco, because it was not the right season, and others in my list are noted by him in his list of the birds observed in South Park, a few, indeed, at Fairplay. Some no doubt would be found at Montgomery, others probably do not reach there.

The following list shows what birds were present just about the time the last of the summer residents would be leaving. I think it hardly likely that any of the birds noted were migrants from any great distance, with the exception, of course, of *Junco hyemalis mearnsi*. I expected to find Pine Grosbeaks, Nuthatches, and Brown Creepers, but it so happened that none were seen. A few notes are included of birds observed from the train when passing through the South Park to and from Alma.

Oxyechus vociferus. Killdeer. A single individual flew past me September 27 as I was examining some beaver work in the South Platte above Alma.

Lagopus leucurus leucurus. White-tailed Ptarmigan. This species was reported common above timber-line in summer. I saw it but once, when I found a flock of six September 26 in a high basin on the north slope of Buckskin Ridge. They had begun the change from summer to winter plumage, one of them being a mottled brown and white, and the other five brown above and white below. I found them in rather an odd manner. I had killed a woodchuck several hundred yards up the hill, and skinned it on the spot. It was noon, and wishing to wash my hands before eating lunch I went down to a little stream which flowed there. I unloaded myself of camera, field glasses, etc., pulled off my coat, had a good wash, and was taking my lunch from my coat pocket when I happened to glance across the stream and saw two Ptarmigan about twenty-five feet away. When I tried to approach them with the camera I flushed four more between me and the first two. From the way the birds flew about when I followed them up after lunch I thought they were making the basin their home, for they merely flew back and forth from one side to the other. The elevation was about 12,000 feet.

Zenaidura macroura marginella. Western Mourning Dove. Seen on two occasions: September 23 I flushed one from a side-hill in Mosquito Gulch at

about 10,600 feet, and on the 29th one flew past me when I was near the South Platte about half a mile above Alma.

Circus hudsonius. Marsh Hawk. One seen from the train at Jefferson September 17, and again October 1; one was seen September 18 above timber-line on Mt. Silverheels; one seen near Fairplay and two or three near Alma.

Buteo borealis calurus. Western Red-tailed Hawk. This seemed to be a common hawk in the region, at least when I was there. Coming down into the Park on the train September 17, several were seen flying about over the hayfields, mostly immature birds; more were seen on the 18th when going up Beaver Creek from Fairplay. While at Alma I saw one or two in Mosquito Gulch at 10,600 feet or more, and they were also seen on one or two other occasions.

Aquila chrysaetos. Golden Eagle. One seen September 18, above timber-line on Mt. Silverheels.

Falco sparverius sparverius. Sparrow Hawk. Seen at Fairplay; in Buckskin Gulch, $2\frac{1}{2}$ miles above Alma, at nearly 11,000 feet; and one from the train at Como.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. One seen September 18, on Beaver Creek, 3 miles from Fairplay, at above 10,000 feet.

Sphyrapicus thyroideus. Williamson Sapsucker. One collected September 22 in Buckskin Gulch, near Alma, at 10,500 feet. Another was seen near Alma on the 23rd, and I thought I saw one in Mosquito Gulch on the 24th.

Colaptes cafer collaris. Red-shafted Flicker. September 18 I saw five or six Flickers together in pine timber on Beaver Creek, about 3 miles from Fairplay, and single birds were seen later in the day, both farther up and lower down the creek. On the 22nd, in Buckskin Gulch about a mile up from Alma, I ran across quite a flock of the birds. They were feeding on the ground in an open park, and I flushed at least sixteen different birds, and think there were more. This was at about 10,400 feet. Seen also in Mosquito Gulch, where one was collected on the 25th. On the 26th two were seen on Buckskin Ridge at 11,000 feet, in mixed dead and green timber. These were the last I saw in the region. One was seen on the 17th at Como.

Pica pica hudsonia. Magpie. A common species everywhere from the time I got into the South Park on the train, but was not noted above 11,000 feet.

Cyanocitta stelleri diademata. Long-crested Jay. Did not appear to be common, and only a few were seen, near Fairplay and near Alma, all below 10,400 feet.

Perisoreus canadensis capitalis. Rocky Mountain Jay. Common in the mountains about Alma, and I saw some about every day while there, and also saw them September 18 in the timber on Silverheels, in fact noted them on that mountain in the very last stunted pines at timber-line.

Corvus corax sinuatus. Raven. One seen flying high above timber-line on Mt. Lincoln, September 18. Probably not uncommon.

Nucifraga columbiana. Clark Nutcracker. A few seen near Fairplay and Alma. Near the former place they were seen in a foxtail pine getting seeds from the cones.

Sturnella neglecta. Western Meadowlark. The Meadowlark was not seen at Fairplay or Alma, but was often seen from the train in the hayfields. It was

seen last about four miles from Fairplay. The altitude at which it was seen varied from 9,100 to 9,800 feet.

Euphagus cyanocephalus. Brewer Blackbird. Common everywhere and noted every day. They were always to be seen about Fairplay and Alma.

Leucosticte australis. Brown-capped Rosy Finch. Seen September 24, 26, and 28, in South Mosquito Gulch, on Buckskin Ridge, and on Mt. Lincoln, always at high elevations, timber-line or higher. At about 12,000 feet in South Mosquito I found a flock of 15 or 20. Several of them worked down a little lower and perched in some dead trees, in the topmost branches, something I do not recall having seen these birds do before, though when at lower elevations in winter I have seen them in low bushes or trees. One specimen secured.



Fig. 37. FOXTAIL PINES IN BUCKSKIN GULCH, THREE MILES ABOVE ALMA, AT ABOUT 11,500 FEET ALTITUDE

Pinus pinus. Pine Siskin. A few seen near Fairplay, September 20, and at least one in Mosquito Gulch, not far from Alma, September 25.

Passer domesticus. House Sparrow. A flock of 20 or 30 seen in Alma. I think they were also present at Fairplay.

Poocetes gramineus confinis. Western Vesper Sparrow. September 17, when on the train en route to Fairplay, a good many sparrows were seen in the hayfields from the car windows. One of these was positively identified as a Vesper Sparrow. It is quite possible that some of these birds may have been Savannah Sparrows, and very likely other species were present.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow. Common in the willows along the streams near Alma and Fairplay, both adult and immature birds. One of the latter collected September 25 had a little patch of black

on one side of its head, with just a trifle of white at its edge. One bird was seen September 26, on Buckskin Ridge, at between 11,500 and 12,000 feet.

Spizella passerina arizonae. Western Chipping Sparrow. An immature bird collected near Fairplay September 19, and two adults seen in Mosquito Gulch September 25.

Junco hyemalis mearnsi. Pink-sided Junco. First identified September 27, when one was collected along the South Platte near Alma, and one or two others were seen. One was seen on Mt. Bross the next day at about 11,000 feet. I was of the opinion that they had arrived two or three days previously, as on September 25 I saw in Mosquito Gulch a large, restless flock of Juncos in thick brush. The few identified were all the next species, but I had not seen Juncos in such a large flock before that day.

Junco phaeonotus caniceps. Gray-headed Junco. Seen on Beaver Creek and on Mt. Silverheels. Observed almost daily in country about Alma. The greatest elevation at which the species was seen was about 11,500 feet on Silverheels.

Melospiza melodia montana. Mountain Song Sparrow. One seen in willows on Beaver Creek, at about 10,000 feet, September 18.

Dendroica auduboni auduboni. Audubon Warbler. Seen in Buckskin and Mosquito gulches, September 22, 23, and 25. A flock of 12 or 15 was seen on the 23rd, which appeared to be all females or immature birds.

Wilsonia pusilla pileolata. Pileolated Warbler. Seen in Buckskin and Mosquito gulches, September 22, 23, and 24, up to 10,500 feet. Only single birds seen. One seen on the first date was in company with Chickadees and at least one Ruby-crowned Kinglet. Allen's list includes these two warblers. Possibly they are the only species of warbler breeding in the region.

Cinclus mexicanus unicolor. Water Ouzel. I fully expected to find this species along all the streams in the region, but saw only one individual, on the South Platte above Alma, September 27.

Troglodytes aedon parkmani. Western House Wren. One was collected September 22 in Buckskin Gulch about a mile above Alma. It was about some low cinquefoil bushes in a meadow where I was setting traps, keeping close among the bushes and stirring about but little. I am quite positive I saw one farther up the gulch the day before.

Penthestes gambeli. Mountain Chickadee. I saw but a few Chickadees, first on Mt. Silverheels and along Beaver Creek, and later in Buckskin Gulch and on Mt. Bross.

Regulus calendula calendula. Ruby-crowned Kinglet. Seen on Beaver Creek and in Buckskin Gulch. Two were collected.

Myadestes townsendi. Townsend Solitaire. Seen on but one occasion, between Fairplay and Alma, September 20.

Planesticus migratorius propinquus. Western Robin. One or two Robins were seen on Beaver Creek, September 18, and noted on several different days near Alma; last on 29th, when several were seen.

Sialia currucoides. Mountain Bluebird. Seen at timber-line on Silverheels, September 18; at Fairplay on the 19th. Observed on several different days about Alma, and in Buckskin and Mosquito gulches, and on Mt. Bross, up to 11,500 feet. Also noted from the train at different points in the South Park.

Colorado Springs, Colorado, December 9, 1914.

FROM FIELD AND STUDY

Franklin Gull: A New Record for California.—Three specimens of the Franklin Gull (*Larus franklini*) have been taken by me at Hyperion, Los Angeles County, California, as follows: No. 1500 (coll. of J. E. Law), sex not ascertained, November 22, 1913; no. 2350, male, October 17, 1914; no. 2587, female, November 24, 1914. All three are in similar plumage, and are apparently immature, corresponding closely in appearance to a specimen (labelled "juv.") from Clay County, Texas, taken October 1, 1879 (coll. U. S. National Museum, no. 80007). The latter is in much fresher plumage than either of mine, and my October specimen, though somewhat worn, is again in notably fresher plumage than either of the two November birds.

In two of my specimens (nos. 1500 and 2350) the forehead is largely white, sparsely flecked with dusky; in the third (no. 2587) the whole top of head is dusky, with a little white on the forehead. In all three there is a quite solid dusky area covering cheeks and back of head. A small dusky crescent around front of eye is conspicuous in all. In the November birds the wing coverts are faded and worn, giving a rusty appearance. In number 1500 (taken November 22) the narrow white tips of the primaries are worn almost away, as is much of the edging of the scapulars. The white tips of the rectrices (in new feathers about 5 mm. broad) are also nearly gone.

All three of my birds have the broad black, or dark brown, subterminal band across the tail, covering all but the outer rectrices, the one marking which, in this species as in *L. philadelphia*, is apparently the most obvious means of distinguishing immatures from winter adults. All have the slaty mantle, different from the brownish wing-coverts, and all have the entire under-parts white, though with slaty flecks on sides of upper breast. One of my birds, and also the National Museum immature at hand, shows a slight pinkish tinge on throat and upper breast. In all three of my specimens bill, tarsi and feet are black, showing no trace of the reddish color ascribed to these parts in the several books I have consulted.

Mr. H. S. Swarth, after pronouncing my birds to be *Larus franklini*, procured for my use, through the courtesy of Dr. C. W. Richmond, the loan of two specimens of this species, for comparison, from the collection of the United States National Museum. One of these, a fall immature, is mentioned above. The other (coll. U. S. Nat. Mus. no. 4320) is an adult, beginning to molt into summer plumage. The privilege of examining these specimens was of inestimable value in ascertaining the status of my birds, as there apparently is no material of this sort in Pacific Coast collections, and I wish here to record my appreciation of the courtesy.

The three birds I have collected were taken from large flocks of Bonaparte Gulls (*Larus philadelphia*). They resemble the latter in size and general appearance, but can readily be distinguished in life by their dusky "collar" and dark-colored primaries.

The winter home of the Franklin Gull, as given by the A. O. U. *Check-List*, includes the west coast of South America; and in the British Museum *Catalogue of Birds* (vol. 25, 1896, p. 194) there are specimens listed from the west coast of Mexico. Apparently, however, the present record constitutes the first for the Pacific Coast of North America, certainly the first for California. The dates of capture indicate the probability of the species remaining here throughout the winter. Can it be that this bird is a regular visitor to our southern coast, though in limited numbers, and has it simply been overlooked heretofore?—J. E. LAW, *Hollywood, California*.

Scott Oriole at San Diego in the Fall.—On September 2, 1914, I saw a male Scott Oriole (*Icterus parisorum*) in eucalytus trees on the Panama-California Exposition grounds in San Diego. This is the latest date on which I have seen this species here.—FRANK STEPHENS, *San Diego, California*.

Early Nesting of the Texas Nighthawk.—Oberholser in his recent "Monograph of the Genus *Chordeiles*", p. 93, gives April 27 as the earliest recorded date in the United States for eggs of the Texas Nighthawk (*Chordeiles acutipennis texensis*). Joseph Grinnell in his "Birds of the Pacific Slope of Los Angeles County" (Pasadena Acad. Sci. Publ. no. 2, p. 27) reports the taking by himself of a set of fresh eggs of this species on April 21, 1897, near Pasadena; and this record is quoted by Willett (Pac. Coast Avifauna no. 7, p. 58). On the 17th of April, 1914, I took a set of these eggs in which incubation was slightly advanced, near the San Juan River, in San Luis Obispo County.—WILLIAM LEON DAWSON, *Santa Barbara, California*.

A Curious Set of Gambel Quail Eggs.—During the season of 1913 I collected several interesting sets of common birds, among them one of fifteen eggs of the Gambel Quail, taken May 24, in the mesquite forest near Tucson. The photograph (fig. 38) shows this set, which was unusual in the great variation in the sizes of the eggs; for it contains not only the smallest, but also the largest egg of *Lophortyx gambeli* that I have ever taken.

The largest and smallest are shown side by side in the center of the photograph, and the others are arranged in the order in which I give the sizes (in inches), as follows: .94x.74; 1.06x.84; 1.04x.85; 1.10x.89; 1.07x.88; 1.17x.91; 1.18x.90; 1.22x.93; 1.19x.95; 1.27x.96; 1.31x.95; 1.30x.98; 1.31x1.03; 1.36x1.00; 1.45x1.03. The average of forty normal specimens is 1.23x.93.—F. C. WILLARD, *Tombstone, Arizona*.

The Breeding of the Snowy Egret in California.—It is well-nigh incredible that the early "fathers", Gambel, Heermann, Cooper, and the rest, who regarded the Snowy Herons (*Egretta candidissima*) as "abundant" in California should have recorded no specific instance of their nesting within our borders. Cooper's naive remark that "In summer it migrates to the summit of the Sierra Nevada" shows, perhaps, how wide of the mark they were in their search. Without a shadow of doubt this species, save for a thirty-year period of persecution by plume hunters, has nested in certain flooded low-lands of

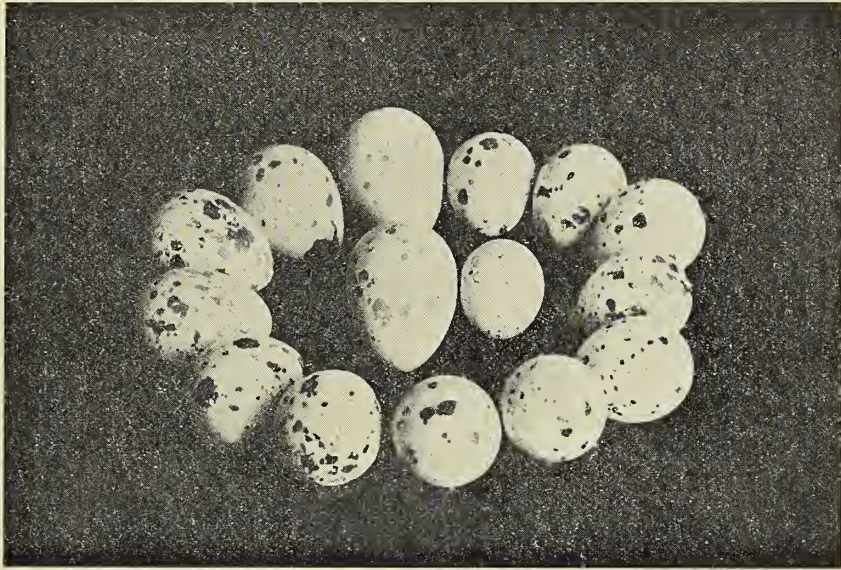


Fig. 38. A CURIOUS SET OF EGGS OF THE GAMEEL QUAIL

Photo by F. C. Willard.

our interior valleys from time immemorial; yet it remained, apparently, for a lucky accident of the past season to establish the first authentic breeding record for the State.

At a point in Merced County some miles from Dos Palos, my son and I, on the 26th of May, 1914, came upon five pairs of these birds nesting in close association with a colony of Black-crowned Night Herons, on a cat-tail island in the middle of a large overflow pond. The Squawks outnumbered the Snowies fifty to one, and it was impossible in the confusion attendant upon approach to tell just where the wary Herons got up. A thorough canvass of the reedy city, however, discovered five nests which contained a uniformly smaller type of eggs, four of five and one of four. One of these began to hatch on the day following, and the eggs yielded in turn chicks covered with a sparse long white down. The operation established also the fact that the Snowy Heron deposits its eggs every other day, and the complementary fact that incubation begins with the deposition of the first egg. Indeed it could not well be otherwise, for a single day's exposure to that blazing interior sun would addle an egg, however hardy.

The youngsters showed, as the days passed, an exaggerated disparity in size and strength, yet even when a week old appeared amazingly small and helpless. Neither did

they appear at all pugnacious, as do baby Squawks, but drew away timidly at the approach of the hand, and for the rest divided their time between panting lustily and scrambling about in search of shade.

The parent birds on all occasions were perfectly silent, and they maintained a discreet aloofness—sad commentary on the fiery furnace of affliction through which this gentle race has passed.—WILLIAM LEON DAWSON, *Santa Barbara, California.*

Additional Records of the California Clapper Rail and Red Phalarope in California.

—On November 22, 1914, Mr. L. P. Bolander, Jr., secured at Tomales Bay, near Point Reyes Station, Marin County, California, the following two specimens which have been donated by him to the California Museum of Vertebrate Zoology.

Rallus obsoletus, California Clapper Rail (no. 24915, Mus. Vert. Zool.), immature male. This is the first record of the species on the ocean side of the Marin peninsula.

Phalaropus fulicarius, Red Phalarope (no. 24916, Mus. Vert. Zool.), immature female, in full winter plumage. The present record is the latest for the season for the north-western coast of California. Beck (Proc. Calif. Acad. Sci., 4th ser., 1910, vol. 3, p. 70) states that there are fifteen specimens of this species in the collection of the California Academy taken near Monterey during December and January.

Early in January, 1915, Mr. F. J. Smith submitted two specimens of Clapper Rail taken on Humboldt Bay, to the Museum of Vertebrate Zoology for determination. The specimens are typical *Rallus obsoletus* (California Clapper Rail). One of these birds was taken by Mr. Fiebig and is at present in the library of the Eureka School. The other is the property of Dr. F. J. Ottmer. These specimens substantiate the Humboldt Bay record made by Cooper and Suckley (Natural History of Washington Territory, 1859, p. 246) and, together with the Tomales Bay specimen, extend the area of occurrence of the species beyond that given by Cooke (U. S. Dept. Agric., bull. 128, 1914, pp. 18, 19).—TRACY I. STORER, *California Museum of Vertebrate Zoology, Berkeley, California.*

Red Phalarope in the San Diegan District.—In view of the scarcity of records of the Red Phalarope (*Phalaropus fulicarius*) from inland points in southern California, it seems worth while to publish a statement relative to specimens recently collected by myself at Nigger Slough, Los Angeles County, California. A female in full breeding plumage was secured May 25, 1914. On November 8, 1914, a male and a female in winter plumage were taken from a flock of about fifty of the same species. The next day, covering the same ground, just three of the birds were observed, and I have seen none since.

A large flock of Avocets (*Recurvirostra americana*) was seen, and a pair secured, at the same place, November 15, 1914; and a pair of Marbled Godwits (*Limosa fedoa*) were also taken at this time.—I. D. NOKES, *Los Angeles, California.*

A Two Hours' Acquaintance With a Family of Water Ouzels.—On August 5, 1914, we were following down Rattlesnake Creek, near Cisco, Placer County, when our attention was drawn to the screaming of some nestling birds. Water Ouzels (*Cinclus mexicanus unicolor*) had been seen in the vicinity, and the locality seemed to be ideal as a nesting site for this species. A waterfall about fifteen feet in height tumbled over a rocky ledge at this point into a fine large pool of clear water which was surrounded, on all but one side, by perpendicular walls of rock. We were not surprised, therefore, to find, on investigation, a Water Ouzel's nest built in a cleft of the rock about two feet from the falling stream of water. The moss of which the nest was built had formerly been kept green by trickling water, but at this date had begun to turn brown. White excrement below the entrance to the nest led to its discovery.

On approaching the nest, one of the occupants, a well-fledged Water Ouzel, flattered from the entrance and dropped down into the pool of water below. Here it immediately dove and swam for a distance of six feet or more and at a depth of about two feet below the surface of the water. Quick, short strokes of the wings enabled the bird to swim rapidly in this medium.

A moment later a second bird flew from the nest. This one, unlike the first, did not dive, but swam about on top of the water, using its wings in the same manner, however. Still another young bird remained in the nest, but repeated attempts to dislodge it failed.

An adult with food in its mouth soon appeared, jumping from rock to rock and "bobbing" continuously. Its call was answered by the birds in the water and the one in

the nest. The food brought appeared to consist of a worm of some sort. After feeding one of the birds, which by this time had taken refuge on a small ledge near the water's edge, the adult flew off down the creek evidently in search of more food. A few moments later it again appeared with food in its mouth and fed the same nestling. The method of feeding was typical of most passerine birds, the young bird fluttering its wings and calling as the food was placed in its mouth. The recipient of all of the parent's attention, after prolonged attempts, succeeded in climbing higher out of the water onto a ledge of rock where the sun soon dried its plumage. It was surprising to see how quickly this little bird gained strength. It would huddle up, sitting perfectly still for a few minutes. Then, appearing rested, it would attempt to climb the almost perpendicular wall. The call of the parent was always a signal for a succession of "bobs", exactly similar to those so characteristic of the adults. Within an hour after leaving the nest this little Ouzel was walking around on a small ledge of rock searching in the crevices and pecking at the lichens and moss growing there.

Six times the adult bird appeared with food, and each time fed but one of the young birds in spite of the persistent calls of the other fledgeling which had taken refuge beneath a rock farther down stream. Finally the calls of the bird still in the nest attracted the parent's attention and it was rewarded with a mouthful.

An excellent opportunity was afforded to see the parent bird dive to the bottom of the large pool for food. With a motion too quick for any observance of detail, the bird started head-first for the bottom. The water was clear enough to show that a perpendicular path was taken; on rising to the surface the bird was not more than two feet away from the place where it first dove. The time actually spent under water, observed by means of a watch, proved to be ten seconds. The water was about ten feet deep. Preference seemed to be shown for the swirling water just beneath the fall. On arriving at the surface the oily feathers seemed to shed the water like magic. In swimming, the bird paddled with its feet, using them alternately. The body seemed very buoyant and the unwebbed feet appeared to furnish plenty of power.

Our interest in seeing the fledgeling birds dive and swim led us to again attempt to frighten the remaining bird from the nest. A long stick and a number of pokes at last drove it to take to water. Instead of diving and swimming, this one fluttered along the surface of the water to the rocky wall on the north side of the canyon and then started to climb up the rock. Within ten minutes it had climbed to a height of twelve feet. By approaching slowly, crawling close along the rocky wall, we almost succeeded in catching it. At one time one of us was within arm's length of it.

The above account is interesting as showing the actions and instincts of young birds the first few hours after leaving the nest. The fact that the observations relate to so unique a bird as the Water Ouzel lends added interest.—HAROLD C. BRYANT and AMY M. BRYANT, *Berkeley, California*.

Notes from the Sea-coast of Southern California.—On July 15, 1914, while hunting along the beach at Corona del Mar (opposite Balboa beach) I noticed a Barn Swallow (*Hirundo erythrogastra*) flying through the air with a feather in its mouth. The swallow entered a small cave which at low tide is partially filled with water. On entering I found, on a small projection, a nest containing two fresh eggs. The parent bird was apparently still building the nest. This appears to be a late nesting record for this bird.

July 6 this year (1914) I collected a Long-billed Dowitcher (*Macrorhamphus griseus scolopaceus*) on a sand-spit in Balboa bay. As Mr. Willett does not record these birds as occurring in the summer time I consider this an early fall migrant.

While collecting at Laguna Beach the same summer I found a small grassy glade at the top of the hills surrounding the town of Laguna, where the Western Yellow-winged Sparrow (*Ammodramus savannarum bimaculatus*) was extremely common. With the exception of two birds I saw at Laguna lakes, one of which I collected, I did not find these birds at any other place. Young birds predominated in number, over two-thirds of the specimens I collected being young of the year. In speaking of this Mr. Swarth says: "The Western Yellow-winged Sparrow is a good take. The species has been recently ascertained to breed in this region, but it is not at all common, and there are not many records. The capture of a young bird at the date on which you took your specimen [June 27, 1914] is pretty good evidence of breeding, and I think the fact is worth recording."—LEON LLOYD GARDNER, *Claremont, California*.

Peculiar Nesting Site of Anthony Towhee.—On April 25, 1914, a friend called my attention to a nest placed in the topmost box of a stack of berry boxes that were standing on a bench in his barn. At the time, the nest contained two partly incubated eggs of the Anthony Towhee (*Pipilo crissalis senicula*). The bird usually entered the barn through a door near the nest, but when this was closed it entered through a window fully ten feet from the nest. For some reason the nest was deserted after the eggs were about half incubated. This is the first instance where I have found this bird nesting otherwise than in a tree or bush.—WRIGHT M. PIERCE, *Claremont, California*.

The House Finch as a Parasite.—Close observation of some of our commonest birds often leads to the discovery of some trait not hitherto ascribed to the species. The practice of making use of the nests of others in which to deposit their eggs is common to many of our North American birds. Among the cowbirds and cuckoos this practice



Fig. 39. NEST AND EGGS OF ANTHONY BROWN TOW-
HEE IN STACK OF BERRY-BOXES

Photo by W. M. Pierce.

is so well known as to need no comment. Certain of the gallinaceous fowls, such as pheasants, partridges, quail, etc., occasionally deposit their eggs in nests of others of their own or allied species.

The waterfowl are represented in this class, many species leaving their eggs to the care of other birds. Thus eggs of the Ruddy Duck, the Redhead, the Shoveller, and others, are frequently found in the nests of other ducks, and coots. Many of the Raptores make use of the deserted nests of crows, ravens, magpies, and others suited to their needs. The sparrow hawks, smaller owls, and numerous species of wrens, chickadees, titmice, etc., use old woodpecker holes.

But as far as I know, the Linnet, or House Finch (*Carpodacus mexicanus frontalis*) is unique among the Fringillidae as a parasite. I first encountered the species under consideration as leaving its eggs to the care of a foster-parent in April, 1908. A nest of

the Black Phoebe (*Sayornis nigricans*) was found under a bridge near San Pedro, California, containing five eggs of the Black Phoebe and one egg of the House Finch. All were heavily incubated, the egg of the House Finch not quite so much as the others. As the female Phoebe was brooding when the nest was found, it was apparent that she had no objection to the intruder, or else was not aware of its presence.

The same year I had occasion to examine a nesting colony of Cliff Swallows (*Petrochelidon lunifrons*) near Los Angeles. Two nests examined had been appropriated by House Finches before the builders had laid. The Finches added a few straws and feathers, and were in sole possession when found. A third nest in this same colony held three eggs of the Cliff Swallow and two of the House Finch. The Swallows were as complaisant to the added burden thrust upon them as were the Phoebes, and were incubating contentedly. Had the young Finches hatched, I wonder if they would have survived the "bed-bugs" with which the nest was infested, such conditions not being natural to the species.

A pair of Arizona Hooded Orioles (*Icterus cucullatus nelsoni*) started a nest of palm-leaf fibers in a eucalyptus tree across the street from my home in the city the same year. Before it was quite completed the builders were ousted by the ever-present House Finches, which made a few changes and reared their young in the cosy basket. The Orioles selected another site in the same tree, and raised a brood without further molestation. The following year a pair of Orioles, probably the same pair of the previous year, appeared in the neighborhood, and soon built a nest near the old one. Wishing to ascertain the contents, I got within sight after a strenuous climb, and beheld two eggs of the owners and one of the House Finch. The Orioles seemed to have submitted to the inevitable; and here, I thought, was a good opportunity to see what would happen to the mixed brood when hatched. But I was doomed to disappointment, for the tree was trimmed before further investigation could be made, and a like chance has not yet presented itself.—D. I. SHEPARDSON, *Los Angeles, California*.

Pink-footed Shearwater on the Coast of Washington.—An extensive movement of Shearwaters observed at Point Grenville on the coast of Washington August 27, 1910, yielded the customary toll of weaklings cast ashore. Among many stranded specimens of *Puffinus griseus* and some of *P. tenuirostris* I noted carefully (but, unfortunately, had no facilities for preserving) a Shearwater which appears to be *Puffinus creatopus*. My notes say, "Underparts white, changing to sooty on sides of throat, edges of wings and (conspicuously) under tail-coverts"; and make mention of bill notably stouter than that of *P. griseus*. Also "feet very pale, might have been pink in life." I was not at that time acquainted with *P. opisthomelas*, which proves to be a smaller, slender-billed form, —and so buried my notes under a misleading caption.—WILLIAM LEON DAWSON, *Santa Barbara, California*.

Another Record of the White-throated Sparrow for California.—With the finding of the White-throated Sparrow (*Zonotrichia albicollis*) on January 28, 1915, by the bridge near the new Agricultural building, a new name has been added to the list of birds of the Berkeley campus. The bird was feeding in a patch of chickweed in company with a number of Nuttall White-crowned and Golden-crowned Sparrows, at a distance of about ten feet from where I was standing. I was first attracted by its brighter brown back and its crown stripes which were noticeably different from those of the White- and Golden-crowns. It then turned and I discovered the distinct white throat patch which settled its identification as the White-throated Sparrow. On three subsequent occasions, January 29, February 9 and 15, I have watched a White-throated Sparrow, presumably the same bird, in the same spot. On February 9 I discovered the bird just after it had taken a bath and for a few minutes was in doubt as to its identity because of the ruffled condition of its feathers; but I watched it until it was dry again and the white throat patch was unmistakable. On the other two dates the White-throated Sparrow was feeding in the company of both Nuttall White-crowned and Golden-crowned Sparrows.—MARGARET W. WYTHE, *Museum of Vertebrate Zoology, Berkeley, California*.

European Widgeon in Washington.—I have the pleasure of recording the capture of a young male European Widgeon (*Mareca penelope*), which I think is the first ever recorded from the state of Washington. It is a male in fine plumage, and was taken by Mr. L. W. Brehm, of Tacoma; the locality was the Nisqually Flats, Thurston County, Washington. Mr. Brehm informs me that there was a flight of several thousand Baldpates (*Mareca americana*), but that he saw no other birds resembling *penelope*. Date of capture January 12, 1915. Identification verified by Dr. A. K. Fisher.—J. H. BOWLES, Tacoma, Washington.

The California Shrike in Montana:—A Correction.—A shrike secured at Anaconda, Montana, May 14, 1911, has recently been examined by Mr. H. C. Oberholser and identified as the California Shrike, *Lanius ludovicianus gambeli*. This bird was originally reported as the Migrant Shrike, *L. l. migrans* (CONDOR, XIV, p. 30). It is possible that this bird is only a variant of the White-rumped Shrike, *L. l. excubitorides*, the common breeding form in Montana. I doubt, however, if this is the case, for the bird was taken in a region where the White-rumped Shrike is not known to breed, west of the continental divide, and at an elevation about 1000 feet higher than that of the regular breeding range of the White-rump. There are no records, to my knowledge, of the occurrence of the White-rumped Shrike west of the continental divide in Montana, so that I believe this is a true case of the California bird having wandered east of its regular range during migrations.—ARETAS A. SAUNDERS, West Haven, Connecticut.

A Winter Record for the MacGillivray Warbler.—On December 17, 1914, a bird of this species (*Oporornis tolmiei*) was located by its note in a dense hedge of cypress close by the old ranch house at the La Brea Fossil Beds. Nearly all the morning it called frequently from almost the same spot, where it kept closely to the densest place, whence it ventured occasionally a few feet into a bed of horehound adjoining. It refused to leave cover even when a grocer's wagon drove within eight feet. When finally secured it proved to be minus all rectrices, a fact that may account for the specimen furnishing what appears to be the only winter record for California.—L. E. WYMAN, Museum History, Science, and Art, Los Angeles, California.

California Condor in Los Angeles County.—A California Condor (*Gymnogyps californianus*) was observed February 16, 1915, and reported to me, by a gentleman from Covina. The bird was in flight low overhead in the San Jose Hills, near Covina. (This is the little bunch of hills lying between Covina, Puente, Pomona and Lordsburg.) Condors used to be very common in this range of hills, but are so seldom seen now that I thought the instance worth recording.—W. LEE CHAMBERS, Eagle Rock, California.

New Winter Records for Arizona.—According to Swarth (Pac. Coast Avif. no. 10, pp. 14, 38), the two following are winter records for Arizona:

Erismatura jamaicensis. Ruddy Duck. This species was present in small numbers on Roosevelt Lake, Arizona, during my stay in that section, November 30, 1914, to February 3, 1915.

Calypte anna. Anna Hummingbird. In many localities along the shore of Roosevelt Lake there are rather extensive groves of "wild tobacco". Here Anna Hummingbirds were plentiful during my entire stay. There may have been other species of hummingbirds present at the time, but *C. anna* was the only one positively identified. An adult male was shot December 1st.—GEORGE WILLETT, Los Angeles, California.

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EDITORIAL NOTES AND NEWS

The San Francisco Meeting of the A. O. U. On the 17th to the 20th of the coming May the Thirty-third Stated Meeting of the American Ornithologists' Union will convene in San Francisco. Many will remember the very successful Pacific coast meeting of the A. O. U. held in June, 1903. That was not, however, a regular stated meeting; in fact, the 1915 congress will be, to the best of our knowledge, the first formal meeting of the A. O. U. ever held west of Washington, D. C.

The business session for Fellows will be held Monday evening, May 17. All other sessions are open to the ornithological public. It is urged that members of the Cooper Ornithological Club attend each day's sessions during the entire convention; papers are invited from C. O. C. members, even from those who do not happen to be members of the A. O. U. All papers will be announced on the general program of the Union, to be distributed at the meeting. In other words, the occasion will be one of general ornithological activity, both within and without the Union's own membership.

It is further planned to have a joint A. O. U.-C. O. C. dinner and "smoker" on Tuesday evening, May 18, for the purpose of

providing an opportunity for personally meeting one another. This will be the one evening affair during the convention, as it is believed that the majority will prefer to use their evenings in "doing" the Exposition. Otherwise the sessions of the A. O. U. will be called each day at 9:30 A. M. and 2:30 P. M. After the A. O. U. congress has adjourned a session of the C. O. C. will be called. This will be a joint meeting of both Divisions, this being the first of its kind since 1903. At the conclusion of the convention, excursions will be undertaken under competent leadership to the Farallon Islands, to Mt. Tamalpais, and to Los Baños.

The A. O. U. committee of arrangements, Mr. Joseph Mailliard, chairman, has selected the Inside Inn, located on the Exposition Grounds, for A. O. U. headquarters. This will be available as a meeting place for those staying outside as well as inside the Grounds, and will enable all to take advantage of the time between sessions for seeing the main features of the Exposition. The Inside Inn has ample accommodations for guests and for the convention sessions. Those not wishing to live in the Exposition Grounds will find the down-town district of San Francisco abundantly supplied with thoroughly modern and moderate-priced hotels. A letter of enquiry addressed to Mr. Joseph Mailliard, 1815 Vallejo St., San Francisco, will elicit any specific information desired.

This congress promises to be no solemn affair; in fact, we are already aware of certain non-serious features in the outline of procedure which is now in the hands of our congenial San Francisco representative. The President of the A. O. U., Dr. A. K. Fisher, of Washington, is widely known as a gentleman of most cheerful qualities—one who is naturally gifted to preside felicitously. Then there is Dr. Witmer Stone, who will temporarily desert the office of *The Auk* for a visit to the Pacific coast, and whose joviality and social qualifications have made Philadelphia famous as headquarters for successful A. O. U. meetings. But we cannot here attempt a catalog of all the Easterners who we know are planning to attend. Come and meet them.

The chairman of the program committee, Professor W. K. Fisher, reports that already several popular illustrated numbers have been promised by C. O. C. members. While movie and lantern facilities are to be provided, it is not meant that the stock of the non-illustrated paper is to be listed below par. On the contrary, it is earnestly desired that a large proportion of the papers will be serious contributions to ornithology, each giving in concise form the results of special observation and study. Members of both the C. O. C. and A. O. U. are requested to send titles, and estimated time of reading, to Professor Fisher.

We learn through Dr. C. W. Richmond that Mr. Ridgway is nearly finished with the Parrots, which, with the Cuckoos and Pigeons, will comprise Part VII of his *Birds of North and Middle America*. The Cuckoos are already in page proof, so that the next volume is well under way.

A special meeting of the Southern Division was called at the Museum of History, Science and Art, Los Angeles, Friday evening, January 22, 1915. Fifty-two members and visitors were in attendance. No business was transacted, the purpose of the meeting being to hear a talk by a fellow Club member, Mr. Joseph Dixon, dealing with his experiences on a recent trip in the far north. Mr. Dixon was a member of a party engaged in gathering natural history specimens on the coast of Alaska. They visited certain of the Aleutian Islands, crossed over to the Siberian shore for a short sojourn, and then east once more to the vicinity of Point Barrow. Here they were caught in the ice and forced to remain until the following summer, the whole trip covering a period of about a year and a half. Mr. Dixon exhibited an interesting series of lantern slides, from photographs taken by himself, illustrating the varying fortunes of the expedition, the character of the regions visited, and certain of the birds and mammals encountered. This lecture constituted one of the most entertaining programs that has been presented to the Southern Division in recent years.

Two new numbers of the Cooper Club's *Avifauna* series are promised for publication in the not distant future. Both are in advanced stage of preparation as far as the authors are concerned. Number 11 will be "A Distributional List of the Birds of California", by J. Grinnell, and will aim to be an up-to-date summary of the nature of occurrence of the 539 species and subspecies of birds now authentically credited to the State. *Avifauna* number 12, by A. B. Howell, will treat of the "Birds of the Southern California Coast Islands". This paper will comprise practically everything that is known concerning its subject, not only distributional status island by island, but extended life-history narrative. The author's personal knowledge of the avifauna of the islands will be reflected in a goodly proportion of original matter.

The Business Managers' report for 1914 recently rendered makes interesting reading for those who like to watch the vigorous growth of the Cooper Ornithological Club. The membership of the Club at the close of 1914 numbered 503, which is 64 more than in any previous year. THE CONDOR for 1914 contained 278 pages, being 26 pages more than for any preceding volume. Pacific Coast Avifauna number 10 was published during the year at a cost of \$376.11. The edition of this, as also of THE CONDOR, was

1000. The full report, as compiled by W. Lee Chambers, goes into great detail; an abbreviated version is as follows:

Dues received during 1914.....	\$1011.67
Subscriptions during 1914.....	227.70
Advertisements	32.00
Sale of Avifaunas	71.88
Sale of back Condors	101.68
Donations	65.00
Refunds	5.61
Total receipts	\$1515.54
In bank January 2, 1914.....	648.36
Total cash assets	\$2163.90
Printing of Condor	\$ 975.18
Engraver's bills	219.28
Expended on Avifauna account.....	437.29
Editorial expenses	22.72
Business Managers' expenses.....	162.47
Southern Division expenses.....	27.85
Northern Division expenses.....	40.70
Sundry expenses	56.55
Total expenditures	\$1942.04
In bank January 2, 1915.....	221.86
	\$2163.90

COMMUNICATION

A NATIONAL BIRD CENSUS

Editor, THE CONDOR:

A preliminary census of the birds of the United States was undertaken by the Bureau of Biological Survey during the spring of 1914. The results were so encouraging that the work is to be repeated during the spring of 1915 on a larger scale, and will probably be repeated yearly thereafter in order to obtain permanent records showing the fluctuations in the bird population of the United States. Observers are particularly desired in the West and South and it is hoped that the readers of THE CONDOR will be able to render valuable assistance in the campaign for the coming season. Anyone familiar with the birds nesting in his neighborhood can help, more particularly as only about the equivalent of one day's work is needed.

The general plan is to select an area containing not less than 40 nor more than 80 acres that fairly represents the average conditions of the district with reference to the proportions of plowed land, meadowland, and woods, and go over this selected area early in the morning during the height of the nesting season and count the singing males, each male being considered to represent a nesting pair. In the latitude of Washington, D. C., the best time is the last week in May; in the South the counting should be done earlier; while in New England and the northern part of the Mississippi Valley about June 10 is the proper time. The morning count should be supplemented by visits on other days to make sure that all the birds previously noted are actually nesting within the prescribed area and that no species has been overlooked.

Readers of THE CONDOR and others who are willing to volunteer for this work are

requested to send their names and addresses to the Biological Survey, Washington, D. C. Full directions for making the census and blank forms for the report will be forwarded in time to permit well considered plans to be formulated before the time for actual field work. As the Bureau has no funds available for the purpose, it must depend on the services of voluntary observers.

Very truly yours,

E. W. NELSON,

Assistant Chief, Biological Survey.

Washington, D. C., February 16, 1915.

PUBLICATIONS REVIEWED

HANDBOOK OF BIRDS | OF THE | WESTERN UNITED STATES | including the Great Plains, Great Basin, Pacific Slope, and | Lower Rio Grande Valley | by | FLORENCE MERRIAM BAILEY | with thirty-three full-page plates by | Louis Agassiz Fuertes, and over six | hundred cuts in the text | Fourth edition, revised | [design] | Boston and New York | Houghton, Mifflin Company | The Riverside Press Cambridge | 1914. Pp. li+570, pls. I-XXXVI, 2 diagrams and 601 figs. in text. (Our copy received December 12, 1914.)

The appearance of the fourth edition, revised, of Mrs. Bailey's *Handbook* is a sufficient attest to its popularity and usefulness. To the average student of birds in the western United States this is the only satisfactory handbook available, and teachers in schools and colleges give it wide use in the classroom and laboratory.

Revision in the present edition consists in the elimination of all the local lists (pages xliii-lxxxii of the original edition, 40 in all) of the original text, the succeeding parts of the introduction being brought forward and repaged to fill the gap, and in the addition of fifty-nine pages (485-544) of new material. This new matter covers the following subjects: "Changes in nomenclature made by the nomenclature committee of the American Ornithologists' Union, 1902-1913" (2 pages), "Species to be added" (3½ pages, with a brief description of each added form), "Species to be eliminated" (½ page), "Birds of the western United States in the nomenclature of the 1910 check-list" (45½ pages, giving the A. O. U. number, the scientific and vernacular names and the range condensed by the extensive use of abbreviations), and "Books of reference" (6 2/3 pages, supplemental to the original list printed on pp. xlii-xlix of the amended introduction). Thus from the standpoint of nomenclature and distribution the revised edition reflects much more of our present knowledge, while the technical descriptions and the miscellaneous notes by Mr. and Mrs. Bailey and others remain unchanged.

In view of the extensive popular use of the book it is to be regretted that the publishers could not concede to Mrs. Bailey a

complete revision of the book, such as she desired. Certain shortcomings, which could not be foreseen when the work was first published, make parts of the original text difficult for the average student to use. However, a thorough revision is to be expected within the next few years, and until then the present edition, as with previous ones, will very effectively fill the need for authoritative information concerning bird life in western North America.—TRACY I. STORER.

ALASKAN BIRD-LIFE | as | Depicted by Many Writers | Edited by | ERNEST INGERSOLL | — | Seven Plates in Colors and Other Illustrations. | — | Published by the | National Association of Audubon Societies | New York, 1914 [our copy received November 27, 1914]; 72 pp., 7 col. pls., 5 hft., 1 map. (To be purchased for \$1.00 at the Office of the Audubon Societies, New York City.)

A splendid idea has here been put into execution—that of making available throughout the schools of a given district a popular account of its birds. No less than 8000 copies of this little book are to be distributed to the school children of Alaska. This benefaction, as we are told in February, 1915, number of *Bird-Lore*, is made possible through private gift for the purpose.

The text consists chiefly of quotations and direct contributions from several leading students of Alaskan bird-life, and insofar as these contributed accounts are rendered verbatim, no criticism can be offered. By far the more important of these contributions come from the pen of our foremost Alaskan authority, E. W. Nelson. His new writings here published are no less virile than those of his Alaskan "Report" of thirty years ago. The colored plates, chiefly by Brooks, are further features of great merit. Let it be understood that, even with the unfavorable comments to follow, the object and, in the main, the execution of this booklet deserve the warmest commendation. It is all the more a pity that a high standard could not have been secured on all of its pages.

Although we are told in the Introduction that "the greatest care has been taken as to accuracy", no less than thirty more or less serious mistakes offend the eye of the reader on the first twenty-five pages. It is only fair to the various contributors to state that these twenty-five pages of matter are chiefly the compilation of the editor of "Alaskan Bird-Life", who thus shows scientific unfitness for the service rendered.

As illustrative of the kinds of errors in evidence, we may point out the following (*italics ours*): "Among those [of the auk family] breeding in crowded colonies south of the Aleutian islands are the ... crested auklets, marbled, ancient, and Kittlitz's murrelets, ... and the black guillemots"—

erroneous in at least four respects. "The pigeon ... auklets appear [in southeastern Alaska] only as *migrants in winter*"—what does it mean! "White-breasted" cormorants and "Gambel's *whitethroat*"—what are they? "The *only game-bird* of the [south-coast district of Alaska] ... is the *white-tailed ptarmigan* ...". "Of the owls, the short-eared finds excellent nesting-places in the *thick woods* ...". "...Both varieties of the Canada or spruce grouse, or fool-hen, resort *in summer* to breeding-places *all over the interior* ..."—than which a more foolish statement could hardly be constructed! The above-quoted, and other statements, are inconsistent with many of the best-known facts in Alaskan ornithology.

It does seem to us that when an organization of the standing and financial resources of the National Association of Audubon Societies essays to engage in instructing the youth of the land with "accuracy", better results than parts of those here presented might have been secured. It is a reflection upon the standing of ornithology and ornithologists in America when presumably representative work is put out in this faulty manner—and for the worthy purpose of popular education.—J. GRINNELL.

WILD LIFE CONSERVATION. BY WILLIAM T. HORNADAY (Yale University Press, New Haven, November, 1914, pp. vi+240, 13 pls.).

That noted champion of wild life conservation, W. T. Hornaday, has just contributed another valuable work to the cause. The book is the result of a series of lectures dealing with wild life conservation as given before the Yale Forestry School. The author says: "The publication of this volume by the University Press may well be accepted as a contribution to a cause. It is hoped by those who have made possible this lecture course and this volume that this presentation may arouse other educators in our great institutions of learning to take up their shares of the common burden of conserving our wild life from the destructive forces that so long have been bearing very heavily upon it."

In his introduction Dr. Hornaday scores University educators for training a grand army of embryologists and morphologists and allowing the annihilation of the species that our zoologists are studying. He asks: "Which is the more important: the saving of the pinnated grouse from extermination, or studying the embryology of a clutch of grouse eggs?"

The book is divided into five chapters, as follows: "The Extinction and Preservation of Wild Life," "The Economic Value of Our Birds," "The Legitimate Use of Game Birds and Mammals," "Animal Pests and their Rational Treatment," and "The Duty and Power of the Citizen in Wild Life Protection." In addition a chapter on "Private

Game Preserves as Factors in Conservation" by Frederick C. Walcott is given, and the book concludes with a bibliography of the more recent works on wild birds with special reference to game preserves and the protection and propagation of game. A number of very telling pictures depicting the slaughter of game and also a number illustrating protection are used as illustrations.

The most pertinent sentences and paragraphs are placed in italics. Most of these expressions are in Dr. Hornaday's positive style. They are expressed in such a way as to make them appear immutable laws. For example, here are some of them: "No one thanks an ancestor who hands over to him only desolation, ugliness and poverty"; "a fauna once destroyed cannot be brought back"; "every wild species of bird or mammal quickly recognizes protection, and takes advantage of it to the utmost"; "if our quail and grouse are decently treated, and sensibly protected, they will come back so rapidly and so thoroughly that we will not need to look abroad for substitutes." We are glad to see a growing sentiment in favor of this last maxim. Our own native game will always be of more value than introduced game.

The time is near at hand when every sportsman will echo the sentiment expressed in the following: "The outing in the open is the thing,—not the amount of bloodstained feathers and death in the game bag." This slogan should be conspicuously posted in every gun club lodge in the United States.

The chapter on "The Duty and Power of the Citizen" furnishes information as to "what the young conservationist can do when the mantle of leadership has fallen upon him." The following advice is given: "Do not propose any local legislation"; "a leader must be willing to sacrifice his personal convenience, the most of his pleasures, and keep at his work when his friends are asleep or at the theater"; "campaigns for wild life conservation should attack educated classes", for "the greatest factor in reforming the wild life situation is *education*, for it is the educated people who educate their legislators into the making of better laws and providing means for their enforcement."

Mr. Walcott's chapter on "Private Game Preserves" deals largely with successful methods of propagating game and the success attendant upon careful protection. He also suggests the aviary as an important adjunct to the education of the public.

"Our Vanishing Wild Life", and this

newer work, "Wild Life Conservation", are unique books, and they have to be placed in a class by themselves. The fact that they are a contribution to a cause, from a man who is devoting his life to that cause, adds interest and force to them. The commendatory criticism of another great champion of wild life, Theodore Roosevelt, is to be found in the *Outlook* for January 20, 1915. —H. C. BRYANT.

DISTRIBUTION AND MIGRATION OF NORTH AMERICAN RAILS AND THEIR ALLIES. By WELLS W. COOKE. Contribution from the Bureau of Biological Survey. [Bull. U. S. Dept. Agric. no. 128, pp. 1-50, 19 figs. (maps) in text. Issued September 25, 1914.]

This paper is a continuation of Professor Cooke's valuable work on the distribution and migration of North American birds. Previous publications of the Survey along this line have dealt with the warblers, ducks, geese and swans, shore birds, herons and their allies, and the egrets. Many papers concerned with the distribution of North American sparrows have been published in *Bird-Lore*.

A total of forty-four forms are considered in the present contribution, which deals with the rails. Of these twenty-one are confined to the West Indies or Middle America, and two species are casual in Greenland, leaving twenty-one forms (18 species and 3 subspecies) which range into or through the United States. The ranges of the extralimital forms and those of casual occurrence are briefly considered, while the ones occurring in the United States are treated more or less at length, according to the amount of information which is available concerning them.

The general, breeding, and winter ranges, spring and fall migrations, and dates upon which eggs or young have been taken or observed, are considered in turn. Maps showing the localities from which birds have been recorded are provided for each of the species occurring in the United States, and for the Spotted Crake of Europe. These show the breeding records, occurrences in summer, in winter, and wintering or resident records. Tables of the spring and fall migrations, showing the numbers of years for which the records have been kept, and the average and extreme dates of first and last appearance, are provided for the better known species. For reasons unknown to the reviewer the Humboldt Bay record of the California Clapper Rail (Cooper and Suckley, 1859, p. 246) is omitted.

Altogether the paper is a valuable contribution to distributional ornithology and an important reference manual. It is to be hoped that other groups may soon be treated in a similar manner and that the publications already issued, when republished, may be provided with distributional maps as in the present paper.—TRACY I. STORER.

SOME RECENT PUBLICATIONS OF THE BUREAU OF BIOLOGICAL SURVEY.—Mr. McAtee's paper¹ on "How to Attract Birds in Northeastern United States" is the first of a series of publications which the Biological Survey plans to issue on similar topics. When the series is completed the whole of our country will have been covered and the special methods to be adopted in each region thoroughly discussed.

The fencing of bird havens and methods of supplying breeding places are first described. Two types of bathing and drinking vessels are figured and the necessity for a water supply pointed out; then the matter of food supply is taken up. Under "Artificial Food Supply" the materials suitable for artificial feeding in order to attract the several kinds of birds in the region are named, and some of the devices for offering the food are shown in the accompanying illustrations. The "Natural Food Supply" is next considered, first as regards seed-eating birds, and then as regards the fruit-eating species. The paper concludes with a table showing the seasons of fruits, both native and introduced, which are available in the region and attractive to the birds found there, and a second table of the fruits which are useful to protect the commercial species by serving as counter attractions. The publication of future bulletins in this series will be awaited with interest.

In "Game Laws for 1914"² Dr. Palmer and his assistants have presented their fifteenth annual report on the progress of game legislation in the United States and Canada. The bulletin presents a brief but comprehensive review of the measures enacted during the year, arranging them by subjects under the several states and in a uniform style to facilitate comparison. The legislation of 1914 was smaller in amount than for any year since 1906. In general it was

¹McAtee, W. L., How to Attract Birds in Northeastern United States. U. S. Dept. Agric., Farmers' Bull. 621, 15 pp., 11 text figs., 1 map. Issued December 14, 1914.

²Palmer, T. S., Bancroft, W. F., and Earnshaw, F. L. Game Laws for 1914. U. S. Dept. Agric., Farmers' Bull. 628, 52 pp. Issued October 20, 1914.

notable in extending increased protection to game animals in various ways. The instigation of the enforcement of the Federal Migratory Bird Law resulted in several states changing their laws to accord with that measure, and other states attempted to make their local laws more uniform.

Of particular interest to ornithologists are the Regulations for the Protection of Migratory Birds, which, as amended, are here presented in full. Tables giving the open seasons for various species of game in the States and Provinces are given, and data are also presented concerning the shipment of game, its sale, bag limits, and licenses for hunting and shipping game.

Bird houses are not so extensively used in the West as is the case in the eastern United States, but Dr. Dearborn's bulletin on "Bird Houses and How to Build Them"³ will doubtless stimulate interest along this important line of bird attraction. The author first comments on the increase in the number of bird houses in use and then proceeds to give practical directions accompanied by complete and detailed illustrations, with measurements, of many types of bird houses. All, from the simple tin can wired in a tree to the elaborate many-roomed "hotels" for martins, are well described. A table gives the best dimensions and height above the ground for houses intended for the various species. Plans for some food shelters are also given. The bulletin closes with some remarks on the care of bird houses and gives some suggestions concerning the handling of bird enemies. It is hoped that bird lovers in the West will avail themselves of this bulletin and put the information which it contains to good use.

Mr. Kalmbach's work on "Birds in Relation to the Alfalfa Weevil"⁴ is the result of two periods of field work in north-central Utah in 1911 and 1912. This pest was only introduced into the region in 1904, so that the results are of more than usual interest in showing the ability of birds to adapt themselves to a new food species in a short period of time. Forty-five species of birds ranging from the California Gull to the Mountain Bluebird were found feeding on the weevil, although the majority of the species were ground-inhabiting passerine

birds. Among these, the sparrows and the blackbirds and their allies were the most effective agents in the destruction of the weevil. The English Sparrow is a very abundant species throughout much of the weevil infested area, especially in the outlying districts, and in consequence of this a very detailed study of its food habits was made. In general it was found that the species was aiding in the destruction of the weevil, and it was recommended that the bounty on these birds be removed but that they be not placed on the list of protected species. In addition to the information concerning the alfalfa weevil there is a great deal concerning the other constituents of the food of the species studied. Five plates, two of which, a Western Meadowlark and a Brewer Blackbird are by Fuertes, and three text-figures illustrate the work.

The paper of anonymous authorship on American thrushes⁵, which is stated to have been "prepared from data furnished by F. E. L. Beal", is here reviewed because of Professor Beal's remote connection with it and also to call attention to the evil results attending compilation by one not well informed or properly able to handle another's findings. All of the other articles in the 1913 Yearbook are signed by members of the various Bureaus of the Agriculture Department; but the author of this contribution seemingly felt it necessary to suppress his identity. The quite "breezy" style of the article reminds one more of a newspaper "story" than of a product from the scientific offices of the Federal government. The article is also marred by lack of definite organization, and irregularity of treatment, in these respects comparing unfavorably with the other articles in this volume and with the contributions which have appeared from the members of the Biological Survey in previous Yearbooks.

Statements concerning the insects found in the stomachs of the thrushes are sweeping in character, and, in general, exact quantitative statements are almost lacking. Rearranged, with superfluous matter eliminated and sweeping statements reduced, the article could be of value in disseminating information concerning these important and widely distributed birds, for the Yearbook reaches a vast number of readers; but in its present form this cannot be fairly said of it.—TRACY I. STORER.

³Dearborn, N., Bird Houses and How to Build Them. U. S. Dept. Agric., Farmers' Bull. 609, 19 pp., 48 text figs. Issued September 11, 1914.

⁴Kalmbach, E. R., Birds in Relation to the Alfalfa Weevil. U. S. Dept. Agric., Bull. 107 (Professional Paper), 64 pp., pls. I-V, 3 figs. in text. Issued July 27, 1914.

⁵Anonymous. The American Thrushes Valuable Bird Neighbors. Prepared from data furnished by Prof. F. E. L. Beal, Biological Survey. U. S. Dept. Agric., Yearbook, 1913, pp. 137-142, frontisp. and pl. XV. Issued 1914.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

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Volume XVII

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Number 3



COOPER ORNITHOLOGICAL CLUB

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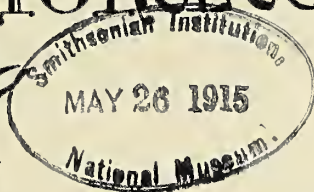
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SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month. Take south-bound car from town; on Spring Street the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

NORTHERN DIVISION: At the Museum of Vertebrate Zoology, University of California, Berkeley. Time of meeting, 8 P. M., the third Thursday of every month. Take any train or car to University Campus. The Museum of Vertebrate Zoology is a large corrugated iron building situated on the south side of the campus immediately north of the football bleachers.

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVII

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A SUMMER AT FLATHEAD LAKE, MONTANA

By ARETAS A. SAUNDERS

WITH FOUR PHOTOS BY THE AUTHOR

THE SUMMER bird life of Flathead Lake, Montana, is already well known through the writings of Mr. P. M. Silloway in bulletins of the University of Montana and in THE CONDOR. The area, however, is a large one. Many parts of it have not yet been visited by an ornithologist, and conditions are changing as the country becomes more thickly settled, so that it is still possible to add more birds to the list or to get new facts about the species previously known.

I had the good fortune to spend the summer of 1914 at the Biological Station of the University of Montana, in the position formerly occupied by Mr. Silloway. The location of the station has been changed from its former position at the north end of Flathead Lake to a spot more centrally located on the east shore, at Yellow Bay. The country has been settled very rapidly. Many areas on the lake shore have been cleared and planted to orchards. The town of Big Fork has sprung up at the mouth of Swan River, the former site of the station, and the town of Polson at the southern end of the lake, near its outlet. It is feared that with changing conditions many of the larger and more picturesque species of birds are becoming scarce. At the same time many of the small song birds are increasing in numbers.

Bird life is very abundant at Yellow Bay, but the number of species that one may find within easy walking distance of the station is considerably less than at the old location at Big Fork. This is because there is less variety to the character of the surrounding country. The station is better equipped with boats than formerly, so that trips may be made in a short time to distant parts of the lake shore, and places not commonly visited in former years are now easy of access.

The Olive-backed Thrush (*Hylocichla ustulata swainsoni*) is by far the most abundant bird about the station. Up till late July these birds sang very frequently. Often eight different birds were heard in song at the same time. The songs were heard throughout the greater part of the day, only ceasing for a few hours at noon. This song, while pleasing at first, is of much poorer quality than the less frequent songs of other thrushes, so that in time it loses its charm and becomes decidedly monotonous. The nests of this thrush are easily found. They outnumbered all others to such an extent that I found an average of nearly three of them to one nest of any other bird.

I had not been at the station long before the first addition to the list of Flathead birds was made. This was a male Rocky Mountain Pine Grosbeak (*Pinicola enucleator montana*) that was discovered on the morning of June 27 by Dr. M. J. Elrod, Director of the Station, in the fir trees not far back of the Station building. We watched the bird for some time and easily identified it before it flew off. It is quite probable that this bird is a common summer resident of the higher mountains nearby, but what it was doing here in the Transition zone, and in the breeding season, is a puzzle. It was not seen again and probably returned to the higher mountains where it belonged.



Fig. 40. OSPREY ISLAND, FLATHEAD LAKE, MONTANA

On the same day that this bird was found, a trip was made to one of the numerous small islands near the southern end of the lake. A pair of Ospreys (*Pandion haliaetus carolinensis*) was occupying a large and conspicuous nest placed in a dead fir at one end of the island. Their presence here for a number of seasons had given this the name of Osprey Island. It is evident that the Osprey is one of the birds that is decreasing in numbers in this locality. Nests that had been occupied in former years were common about the lake shore; but this was the only occupied nest that I saw during the entire season. (See fig. 40.)

The top of Osprey Island is covered with a dense thicket of bushes, and about its edges are numerous dead fir stubs and a few live cottonwoods. The whole island is small, only a few acres in extent, but the bird life on it is abundant. Nests were numerous, and altogether I found on it, in the course of half an hour, more nests than I found in all other places about the lake put together during the entire summer. Yellow Warblers (*Dendroica aestiva aestiva*) were perhaps the most numerous, but Olive-backed Thrushes, Robins (*Planesticus migratorius propinquus*), and Catbirds (*Dumetella carolinensis*) were not far

behind in point of numbers. Tree Swallows (*Iridoprocne bicolor*) and Red-shafted Flickers (*Colaptes cafer collaris*) were nesting in the fir stubs, and several pairs of Juncos (*Junco hyemalis* subsp.?) were feeding young out of the nest. The number of nesting birds was remarkable and furnished a good example of the amount of bird life that a small area can support when it is isolated and thus protected from natural enemies.

On June 30 a party from the station visited Big Fork and Daphnia Pond at the north end of the lake. Here I was fortunate in finding three species not previously listed from Flathead Lake. The first of these was the Least Flycatcher (*Empidonax minimus*). A single individual of this species was in the cottonwood trees at the mouth of Swan River and was easily identified by the "chebee" call-note, a note which is totally different from that of other species of *Empidonax* found in this region.

I am of the opinion that the Least Flycatcher is increasing in numbers in Montana, moving westward in its range. Early records of the bird in the state



Fig. 41. A BAY IN WILD HORSE ISLAND, FLATHEAD LAKE, MONTANA

are few, but at present it is very common in cottonwood groves in many places east of the continental divide, notably at Bozeman, Livingston, Great Falls, Choteau, and probably other places. This bird appears to be the first one recorded west of the divide, but if my theory is correct it may be expected to become common in the region in the future.

The second new bird for the region found that day was the Cassin Vireo (*Lanivireo solitarius cassini*). Two individuals were seen in the trees near Big Fork. Later I found by careful observation that this bird is a fairly common summer resident in the fir forests about the lake. The following day, July 1, I secured one at Yellow Bay for more definite identification. This bird has evidently been previously overlooked in the region, owing to the similarity of its song to that of the commoner Red-eyed Vireo.

The third new bird was the Orange-crowned Warbler (*Vermivora celata* subsp.?), an individual of which was found in song in a large area of out-land on the road to Daphnia Pond. This bird was found in the same place a

few years ago by Mr. Silloway and noted in an unpublished manuscript of his now in the possession of Dr. Elrod. It is another bird that is probably increasing in numbers due to the increasing areas of cut-over land.

The west shore of Flathead Lake is in general quite different in character from the east shore. The soil is evidently drier and the rainfall is probably considerably less. The forests are largely confined to slopes of east and north exposure, while the other slopes are clothed only with open grass land. These forests are composed almost entirely of yellow pine, the other trees, such as Douglas fir, western larch and Engelmann spruce, being confined to a few scattered individuals. The bird life of the two shores consequently differs

considerably, such species as the Audubon and Townsend warblers, the Kinglets and the Olive-backed Thrush, that are common on the east shore, being almost lacking here, while in the open pine forests Western Wood Pewees are the commonest birds, and in the grass lands Western Meadowlarks and Western Vesper Sparrows are abundant, all of these species being rare or local on the east side of the lake.

These conditions are found well illustrated on Wild Horse Island, the largest island in the lake. This island is near the west shore and almost directly across the lake from Yellow Bay. Here, on July 2, two more birds new to Flathead Lake were found. The first of these was the Pygmy Nuthatch (*Sitta pygmaca pygmaca*). I observed and later secured a single bird of this species in

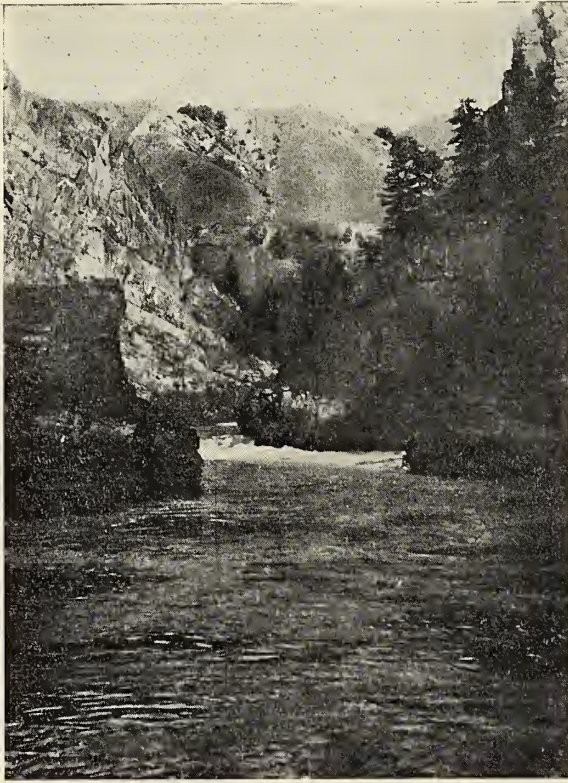


Fig. 42. CANYON OF THE PEND D'OREILLE RIVER, MONTANA; NESTING GROUND OF THE VIOLET-GREEN SWALLOW

the pines, and Dr. Elrod saw three more on another side of the island. The other new bird was the Prairie Falcon (*Falco mexicanus*), a male of which flew low over my head as I was adjusting my camera to take some pictures from the top of a high rocky hill on the west end of the island.

The mountains of the Mission Range nearest to Yellow Bay are rather low in elevation. Their sides have been burned repeatedly by forest fires, so that down timber, brush and thickets of young lodgepole pine make climbing very difficult. A trip made to the top of one of the peaks on July 16 was rather disappointing in the number of birds found. As we ascended the mountain most of the species found about the lake shore disappeared, while few of the

characteristic mountain birds were found to take their places. Juneos became more abundant and Townsend Solitaires (*Myadestes townsendi*) were found about some rocky cliffs. The Richardson Grouse (*Dendragapus obscurus richardsoni*) was perhaps the only bird that was really common. These were mostly females with broods of half-grown young. The females flew up into the trees at our approach, watching anxiously, while the young, which though able to fly showed little fear, remained nearer the ground.

On July 23 a trip was made to Polson, and thence down the Pend d'Oreille River to a rocky canyon about six miles below the outlet of the lake. Here the character of the country was quite different from any that we had visited previously. The region had never been visited by Mr. Silloway, so I had the good fortune to add two more birds to the Flathead Lake list that are not found in other localities of the region. The first of these was the Violet-green Swallow (*Tachycineta thalassina lepida*) that was breeding in considerable numbers in hollows of the limestone cliffs of the river canyon. Many of the young birds had left the nests and were perched in the tops of dead cottonwood trees along the river bank. From these perches they sallied forth on rather uncertain wings to meet the parents as the latter came with food. Several specimens, including young of the year, were secured. With the Violet-greens I found the second new bird of the day, the Rough-winged Swallow (*Stelgidopteryx serripennis*). Young of this species were also about. Two specimens secured included an adult and a young bird of the year. (See fig. 42.)

Hummingbirds are more abundant at Flathead Lake than I have found them elsewhere in Montana. Both the Rufous Hummingbird (*Selasphorus rufus*) and the Calliope Hummingbird (*Stellula calliope*) are common about the station at Yellow Bay. A nest of the latter species was found in one of the yellow pines in front of the station. A limb about six inches in diameter projected horizontally from the tree at a height of about 20 feet. On the under side of this limb was a short dead branch about an inch in diameter. The nest was saddled on this branch under the larger limb in such a way that it was protected both from the rain and from the rays of the sun. The nest was first discovered through the actions of the parent bird, which was very belligerent in protecting her home from all birds and other animals that approached too closely. A pine squirrel had ventured into the tree and the mother hummer chased it away immediately, following it a long way through the trees and darting at it first from one side and then from the other. The nest contained half-grown young when first found.

Infrequent feeding periods seem to be the rule with birds that feed by regurgitation. In this case the mother hummer fed her young in periods that averaged a little over half an hour apart. The feeding was in the usual hummingbird fashion, not differing perceptibly from the methods of the Ruby-throated and Rufous hummingbirds. The young left the nest about a week after it was found. We removed the nest later for better examination. It was a beautiful structure, built almost entirely of white cottonwood down, decorated on the outside like that of other hummingbirds with bits of green lichens.

During the first half of August I was away from Yellow Bay on a trip through the Glacier National Park. On my return, August 18, I found that the fall migration had started. Ring-billed Gulls (*Larus delawarensis*) were much more numerous about the lake than they had been in midsummer. Soli-

tary Sandpipers (*Helodromas solitarius einnamomeus*) were seen occasionally, and on August 23 a small flock of Pectoral Sandpipers (*Pisobia maculata*) was noted. Eared Grebes (*Colymbus nigricollis californicus*) appeared on the waters of the lake, and some of the song birds, notably the Western Tanager (*Piranga ludovieiana*), had greatly decreased in numbers.

On the last day of my stay at the station, August 25, another new bird was added to the Flathead list. A swift flew over the station building, and hovered about long enough to be identified as a *Chaetura*. I did not see it closely enough to make sure of the species, but considering the locality there is little doubt but that it was Vaux Swift (*Chaetura vauxi*). This bird has been recorded but once previously from Montana, when a bird was taken at Silver, Missoula County, June 25, 1891 (Bendire, *Life Histories of North American Birds*, vol. II, 1895, p. 183). This is also in the western part of the state. Mon-



Fig. 43. NEST AND EGGS OF THE OLIVE-BACKED THRUSH, AT FLATHEAD LAKE, MONTANA

tana records of the Chimney Swift are equally rare and only from the extreme eastern part of the state. While visiting Mr. H. P. Stanford at his taxidermist shop at Kalispell the next day, he informed me that he had also seen swifts at Somers, at the north end of Flathead Lake, but did not know what kind they were.

I obtained from Mr. Stanford several records of other birds that are new to Flathead Lake, most of which are represented in his collection of mounted birds from this region. He possesses two good specimens of the Western Grebe (*Aechmophorus occidentalis*) which he states occurs regularly on Flathead Lake in September. There are no previously published records of this bird from Montana to my knowledge. He also has a specimen of the White-winged Scoter (*Oidemia deglandi*), and stated that he has mounted for others at least three specimens of the Surf Scoter (*Oidemia perspicillata*), both species being

fall migrants on the lake. The latter species is new to the state. He possesses an excellent mounted specimen of the Trumpeter Swan (*Olor buccinator*), which occurs in this region, as recently recorded by Mr. H. K. Coale (*Auk*, xxxii, 1915, p. 87.) There seem to be no published records of the Great Gray Owl (*Scotiaptex nebulosa nebulosa*) from the state, but Mr. Stanford has a mounted bird and states that the species is not uncommon about Kalispell in winter and that he has seen it in summer.

One change should be made in the subspecies of one of the birds breeding at Flathead Lake. A male Golden-crowned Kinglet, taken at Yellow Bay, June 25, proves to be the western bird (*Regulus satrapa olivaceus*), as identified for me by Dr. L. B. Bishop. This is the first bird of this species that I have taken in the state during the breeding season, but its subspecies is the same as that of fall migrant birds taken in other parts of the state.

I have questioned above the subspecies of Junco found here. Mr. Silloway listed it as the Shufeldt Junco (*Junco hyemalis connectens*), but the A. O. U. Check-List includes this region in the range of the Montana Junco (*J. h. montanus*). The birds as seen in the field certainly look like the Shufeldt, but I have taken no specimens.

I have also questioned the subspecies of Orange-crowned Warbler, and believe that the subspecific identities of a number of other species should be questioned. Flathead Lake, in addition to being west of the continental divide, is in a much more humid region than any other part of Montana, being more like northern Idaho and northeastern Washington in this respect. I would not be surprised to find that the subspecies of many such birds as the Orange-crowned Warbler, Song Sparrow, Towhee, Chickadee, Horned Lark, and Red-winged Blackbird are not what they were first reported to be, but are more like those of northern Idaho.

West Haven, Connecticut, February 16, 1915.

AN APPARENT HYBRID BETWEEN SPECIES OF THE GENERA *SPATULA* AND *QUERQUEDULA*

By H. S. SWARTH

WITH ONE PHOTO

(Contribution from the Museum of History, Science and Art)

THE LOS ANGELES Museum of History, Science and Art has recently received as a gift a specimen of a duck presenting certain peculiar features. The bird was given to the Museum by Mr. A. E. Jackson, who shot it December 13, 1914, on the grounds of the Crescent Gun Club, near Del Rey, Los Angeles County, California. It was sent to the Museum in the flesh, and there made into a study skin.

The general appearance of the bird is such as strongly to suggest the possibility of its being a hybrid between the Shoveller (*Spatula clypeata*) and one of the species of *Querquedula*, the Cinnamon Teal (*Q. cyanoptera*) or the Blue-winged Teal (*Q. discors*). It is a male, but in the mottled plumage of the immature, and is probably a bird of the previous spring.

Coloration and markings are as follows: Chin and throat, immaculate, pale pinkish buff; sides of head, and sides and front of neck, with ground color of the same, thickly streaked and speckled with dusky; top of head dull blackish, the feathers narrowly edged with pinkish buff. The dusky of the top of the head merges into drab gray along the median line of the back of the neck. The feathers of the back are mostly plain blackish, unmarked, but with these there are other feathers intermixed, apparently remnants of the disappearing immature plumage, of the same ground color, but with edgings and crescentic cross markings of pale pinkish buff. Ground color of upper breast buffy, the feathers with blackish centers and broad, blackish, encircling ellipses. On the lower breast, abdomen and crissum, the ground color becomes decidedly reddish, close to brick red, and the dusky markings are isolated spots. A spot is present on nearly every feather. Sides and flanks with larger blackish

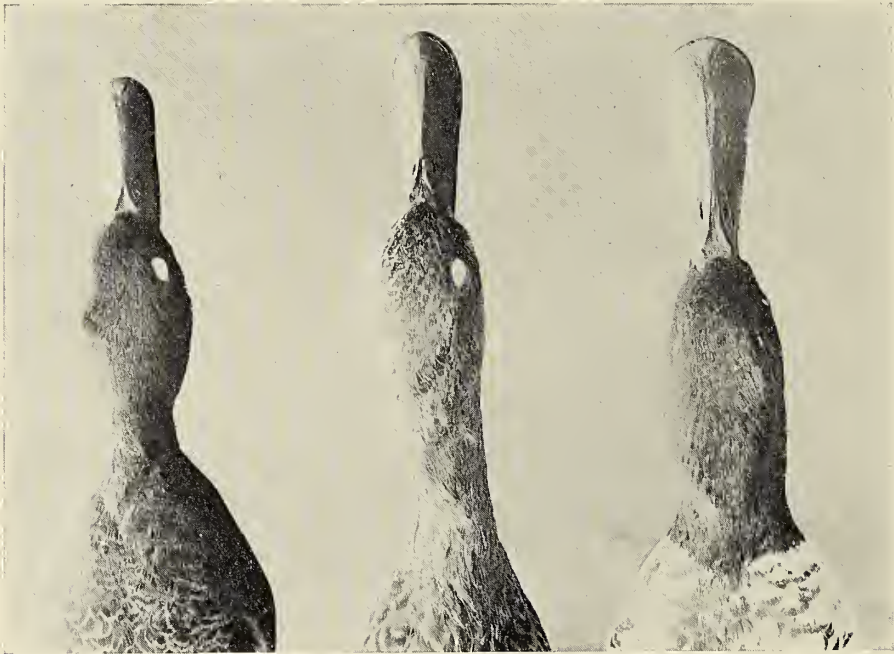


Fig. 44. FROM LEFT TO RIGHT: CINNAMON TEAL, SUPPOSED HYBRID, AND SHOVELLER; SHOWS RELATIVE SIZE AND PROPORTIONS OF BILL OF EACH

spots, and broad crescentic barring of dusky and buffy. In the under tail coverts new feathers are appearing, some black, others with fine vermiculations of white and black, or barred with black and buff. There is appearance as of a pure white area developing on either side of this tract.

The wings of the male Blue-winged and the Cinnamon Teal appear to be alike, and both seem to be indistinguishable in color and markings from the Shoveller. The bird under consideration has the wing of the same general type, blue lesser coverts, with narrow white band, and metallic green speculum. Bill blackish, feet yellowish, as in the immature male Shoveller. The bird is undergoing molt over much of the body, there being many old feathers on the back and a few on the breast. The lateral rectrices are old and frayed, but the central pair are new, and still partly ensheathed.

There is but little distinctive in the coloration of this bird to be seized upon as definitely determining its relationships, though its size and proportions are such as at once to attract attention. It is rather singular that upon careful analysis of colors and patterns there appears to be such a lack of recognizable characters of this sort serving to distinguish immatures of such widely different birds as are the Shoveller and the Cinnamon and Blue-winged Teals. The specimen in hand, an immature male, is in general appearance most suggestive of the Shoveller, but in coloration and pattern exhibits nothing that might not be included in the range of variation in any one of these species. The bill, of course, is the striking feature, for although less exaggerated than in the Shoveller, it is still of unwieldy size.

In the accompanying table of measurements comparison is made between the supposed hybrid and adult males of *Spatula clypeata*, *Querquedula cyanoptera*, and *Q. discors*. Analysis of the figures is of interest. The two teals are of approximately the same size, and it will be noted that the bird in question in its general proportions occupies a position almost exactly intermediate, between the teals on the one hand, and the Shoveller on the other. There are certain slight differences in measurements between the two species of *Querquedula*; and in every particular save in bill measurements our bird is nearer to *discors* than to *cyanoptera*. It would be unsafe to draw any inferences as to its parentage from this alone, however, for the crossing of the Cinnamon Teal with the Shoveller would naturally result in a bird somewhat larger than the former, hence in size rather nearer to *discors*. The foot measurements of the supposed hybrid are noteworthy, for though a relatively large bird, as compared with the teal, these measurements are almost exactly as in *discors*.

MEASUREMENTS IN MILLIMETERS OF ADULT MALES OF SHOVELLER, CINNAMON TEAL, BLUE-WINGED TEAL, AND SUPPOSED HYBRID

	<i>Spatula</i> <i>clypeata</i> no. 415 ¹	Hybrid no. 473 ¹	<i>Querquedula</i> <i>cyanoptera</i> no. 178 ¹	<i>Querquedula</i> <i>discors</i> no. 3955 ²
Length of wing.....	243	200	179	189.5
Length of tail.....	85.5	70	62	68.2
Exposed culmen.....	67.2	50	44	42
Length of bill from anterior end of nostril....	49	39.5	34.2	32.5
Greatest width of bill.....	29.8	21	18	16
Width of bill at narrowest point.....	14.5	13.5	17	13.5
Depth of upper mandible at base.....	15.8	15	14.2	13.8
Length of tarsus.....	37	32	33	32
Length of middle toe without claw.....	43	38	39.5	37

¹Collection of Museum of History, Science and Art.

²Collection of F. S. Daggett.

Though the coloration of this bird is, as stated above, of an undecisive nature, there is one feature that is worth notice. The appearance of the lower breast and abdomen, reddish ground color with black spots, is at once suggestive of the adult male of the Blue-winged Teal, and in fact it is very closely similar to the markings in the single bird of that species I have had for comparison.

After all, however, details of coloration do not help much, for in any case a mixed parentage, with the Shoveller on one side, and either of the teals of the genus *Querquedula* on the other, might produce the result before us. It seems safe to say, though, that some one of these combinations must have occurred. Only the Shoveller could have produced such a bill, modified as it is, and only

the combination of a teal with the Shoveller could have caused the general reduction in size. Also it seems safe to say that had the teal been of the genus *Nettion* some one of the distinctive peculiarities of that group would have appeared in the offspring.

In southern California the Blue-winged Teal is such a rarity that one is apt to jump to the conclusion that the bird in hand must be the result of the combination of the Cinnamon Teal and the Shoveller. If this bird were known to have been hatched in the same general region in which it was shot this assumption might be justified, but as it may well have been a migrant from farther north, where the Blue-winged Teal breeds, it is unsafe to draw such a conclusion.

Among the ducks aberrant individuals combining the characters of two distinct species are of not uncommon occurrence, and from the way in which the Anatidae have been divided generically, this usually means hybridization between distinct genera, rather than merely between species of the same genus. Several combinations have been recorded from time to time, perhaps the most common being the mixture of the features of the Mallard (*Anas platyrhynchos*) and the Pintail (*Dafila acuta*). Usually such individuals have been regarded as the offspring of diverse parentage, as "hybrids" in fact, rather than as "mutants", suddenly developing peculiar characters. The present writer has examined perhaps ten or twelve such doubtful birds, and in each case the theory of hybridization seemed to be the more plausible explanation of conditions.

The arguments already set forth by Allen (*Science*, n. s., vol. 22, 1905, pp. 431-434) in similar cases among other groups of birds, apply with equal force to the ducks. Among the ducks there is an added factor, as with these birds more than with any others there is the possibility of crippled birds being forced to remain at points outside the normal breeding range, among individuals of other species. In such cripples loss of flight is frequently the only disability, the birds being otherwise strong and healthy, and under such conditions it is not extraordinary that there is occasional indiscriminate pairing of individuals belonging to different races.

Museum of History, Science and Art, Los Angeles, California, February 6, 1915.

AN ANNOTATED LIST OF THE BIRDS OF KOOTENAI COUNTY, IDAHO

By HENRY J. RUST

WITH MAP AND FOUR PHOTOS BY THE AUTHOR

KOOTENAI County comprises a larger portion of northern Idaho known as the Panhandle. It is bounded on the north by Bonner County, which was created by cutting off the northern half of Kootenai County, on the east extends almost to the Montana boundary line, and is bounded on the west by the State of Washington.

There is but little level prairie land in the County; of fifty-nine townships, less than four are level and about two rolling prairie, the balance being hilly or mountainous.

Lake Coeur d'Alene is the largest body of water in the County, being twenty-two miles in length, narrow in width, with an area of 41.4 square miles, and with a shore line of 103 miles. Its general trend is north and south; elevation 2120 to 2136 feet. The Coeur d'Alene mountains, north and east of the Lake, are a continuation of the Bitterroot Range; in them the Coeur d'Alene River rises and flows into the southern end of the lake. Five miles farther south the St. Joe River forms the other principal tributary. The Spokane River is the outlet of the lake, and empties into the Columbia about seventy-five miles northwest from the lake.

Fernan Lake is a small body of water situated a short distance from Coeur d'Alene City. The lake is fed by a small creek bearing the same name, which flows through an alder swamp of nearly 100 acres extent at the east end of the lake. In this swamp and on the hills surrounding Fernan Lake I have observed 76 species of birds. Coeur d'Alene Lake and also the smaller lakes are encircled with hills which at one time were covered to the shores with a dense growth of yellow pine and fir, but in the past few years have been denuded to a great extent by forest fires and logging operations. These hills are now growing up with dense stands of young Douglas fir, white fir, western larch, lodgepole pine and yellow pine. The more open hillsides and ridges are covered with a thick growth of shrubs, mainly ocean spray (*Schizonotus discolor*), ninebark (*Opulaster pauciflorus*), buckbrush (*Ceanothus sanguineus*), sticky laurel (*Ceanothus velutinus*), and serviceberry (*Amelanchier alnifolia*). The undergrowth on the low hills is mostly composed of *Pachistima myrsinites*, thimble berry (*Rubus parviflorus*), bracken fern, Oregon grape, and occasion-



Fig. 45

ally large patches of kinnikinnick, the berries of which are a favorite food of the Ruffed Grouse.

The slopes of the higher ranges including the Coeur d'Alene Mountains, which have escaped the ravages of extensive forest fires in the past six years, are covered with dense stands of white pine and Douglas fir, the open ridges and burned over areas being grown up with shrubs similar to lower hills. The kinnikinnick is replaced by large patches of blueberry, a haunt of the Richardson Grouse. The numerous mountain streams are lined with a growth of willows, alder, and *Spirea menziesii*, which latter becomes very dense in shady places near sources and outlets. Where streams flow into lakes there are often flats several acres in extent which are subject to overflow in the spring.



Fig. 46. TOWNSITE OF COEUR D'ALENE, IDAHO; HEAD OF SPOKANE RIVER AND FORT SHERMAN MILITARY RESERVATION IN FOREGROUND

Many of the flats are covered with a growth of tules, water grasses, willows, and *Spirea menziesii*, and are bordered with a few cottonwood and aspen and inhabited by a number of species of birds that prefer deciduous timber and marshy ground.

The scarcity of ducks and the absence of many species of shore birds in this vicinity may be due to several causes: A general decrease in numbers of waterfowl as residents and migrants, and by a lack of feeding and breeding grounds. In former years the St. Joe marshes, and a large marsh about one and a half miles west of the city, locally known as meadows, were frequented by a large number of waterfowl, many of them breeding in seclusion. Present conditions are greatly changed by continuation of high water throughout the

year, caused by the Washington Water Power Company in Spokane River at Post Falls.

The annual spring thaw and melting of deep snow in the mountains causes a heavy rise of the water lasting till the early part of June, and with the backing up of low water of the lake caused by the dam, a greater part of the marshes, flats and shores are covered to such a depth that very few species of birds are to be found. A large portion of the southern end of the lake, Chateolet Lake and St. Joe Valley were formally included in the Coeur d'Alene Indian reservation and being free from settlement offered seclusion to many waterfowl. The opening of this reservation to settlement in 1906 has had a tendency to lessen the numbers of shore birds and Anatidae formerly seen in this locality.

One-fourth of the area of Kootenai County is embraced in the Coeur d'Alene National Forest Reserve; also a small portion including Chateolet Lake has been set aside as a State Park. As Chateolet Lake has always been a favorite resort of waterfowl, it is hoped the protection now offered will tend to increase the numbers as well as species. The protection offered by the Forest Reserve may in time have a noticeable effect in the increase of many species which prefer the dense coniferous timber, and mountainous regions. The old Fort Sherman military reservation, which was well represented in species, was abandoned in 1898 and later sold at public auction. It is now well built up and is a continuation of Coeur d'Alene City. (See fig. 46.)

The following list of species has been prepared from personal observations dating from March, 1910, to December, 1914. Species marked with an asterisk are, to the best of my knowledge, new records for this vicinity. In the preparation of the list I desire to express my obligations to Mr. J. Grinnell and to the Smithsonian Institution, for assistance in identifications of specimens, and to Mr. F. A. Shallis, a local taxidermist, for the privilege of examining and measuring a number of specimens in the flesh.

Aechmophorus occidentalis. Western Grebe. Not common fall and winter visitor on Lake Coeur d'Alene; also seen on Fernan Lake. Most frequently observed from September to December. A few may remain throughout mild winters when the lakes do not freeze over.

Colymbus nigricollis californicus. Eared Grebe. Rare in this locality. One adult specimen examined October 9, 1912, taken on Lake Coeur d'Alene. (Recorded in CONDOR, xv, p. 41.)

Podilymbus podiceps. Pied-billed Grebe. Not common fall and winter visitant on Lake Coeur d'Alene. Largest numbers noted on the lake during the month of November, 1914.

Gavia immer. Common Loon. Rare resident. Several young seen on Fernan Lake in fall; and young males examined, taken on Lake Coeur d'Alene.

Gavia stellata. Red-throated Loon. Rare. One specimen examined, a young female, taken on Lake Coeur d'Alene, October 6, 1912. (Recorded in CONDOR, xv, p. 41.)

Larus delawarensis. Ring-billed Gull. Not common fall and winter visitor on Lake. Largest numbers seen on Lake Coeur d'Alene, during the fall of 1912. Very few noted in 1913-14.

Larus philadelphia. Bonaparte Gull. Not common fall and winter visitor on Lake Coeur d'Alene.

**Sterna hirundo*. Common Tern. Rare. One specimen examined, taken on Lake Coeur d'Alene.

**Hydrochelidon nigra surinamensis*. Black Tern. Fairly common on St. Joe marshes in June, 1914; probably breeding. One seen at Hayden Lake in June, 1914.

Mergus americanus. American Merganser. Rare fall and winter visitor. Two adult males examined, taken at Hayden Lake, November 19, 1914.

Mergus serrator. Red-breasted Merganser. Becoming rare. One specimen examined, taken on Lake Coeur d'Alene.

Lophodytes cucullatus. Hooded Merganser. Not common; occasionally seen in the fall on St. Joe River and Chatcolet Lake.

Anas platyrhynchos. Mallard. Rare resident, and migrant. At one time the most abundant duck in this locality.

Mareca americana. Baldpate. Becoming rare. Occasionally seen in the fall on St. Joe marshes.

Nettion carolinense. Green-winged Teal. A small flock seen on Coeur d'Alene River, August 18, 1910. A few taken on St. Joe marshes in the fall.

Querquedula cyanoptera. Cinnamon Teal. Becoming rare. One specimen examined, taken on St. Joe marshes.

Spatula clypeata. Shoveller. Fairly common in the fall on St. Joe marshes; may breed.



Fig. 47. VIEW SHOWING PORTION OF FERNAN LAKE AND SURROUNDING HILLS, IDAHO; LOOKING EAST

Aix sponsa. Wood Duck. Becoming rare. Two specimens examined September 22, 1912, taken on St. Joe marshes.

Charitonetta albeola. Bufflehead. Not common; a few seen in fall on Lake Coeur d'Alene. Also seen on Fernan Lake.

Histrionicus histrionicus. Harlequin Duck. Rare. One specimen examined, taken on St. Joe marshes.

***Oidemia deglandi.** White-winged Scoter. Common on Lake Coeur d'Alene from October 20 to December 1, 1913. A number of specimens examined were young females.

Oidemia perspicillata. Surf Scoter. Rare fall migrant. One adult male examined, taken on Fernan Lake, October 9, 1912. (Recorded in CONDOR, xv, p. 41.)

Erismatura jamaicensis. Ruddy Duck. Common fall migrant, occurring in largest numbers after severe storms.

Branta canadensis canadensis. Canada Goose. Until recent years large flocks of Canada Geese passed over the city on their way south during the month of November, and also on returning on their northern spring migration. Large flocks would stop to

rest at the southern end of the lake and on St. Joe marshes. A few would spend the day in the grain fields in the Palouse farming district and return to the sheltered bogs of the lake to spend the night. During the fall and winter of 1913, I failed to see or hear any migrant flocks and none for the fall of 1914. Very few Geese have been seen on the lake for several years past. If migrations still continue over the same course the birds must pass over late at night and high up. They may be diminishing fast in numbers.

**Olor buccinator.* Trumpeter Swan. Rare fall migrant; occasionally seen at southern end of lake. One seen on Lake Chatcolet October 30, 1914.

Botaurus lentiginosus. American Bittern. Rare resident of the marshes. Taken at meadows, Lake Coeur d'Alene; also on Fernan alder swamp.

**Ardea herodias herodias.* Great Blue Heron. Rare fall and winter visitor. Three specimens examined: One taken on marsh, Fernan Lake; two specimens taken along St. Joe River,—one being an adult male, February 14, 1913.

Porzana carolina. Sora Rail. Rare resident of the marshes; one specimen examined.

Fulica americana. American Coot. Fairly common in fall on open water. Large numbers congregate on Chatcolet Lake since the passage of the law prohibiting the use of motor boats in hunting water fowl on the lake.

Lobipes lobatus. Northern Phalarope. Rare fall migrant. One specimen noted on Lake Coeur d'Alene.

Recurvirostra americana. Avocet. Rare. One specimen examined, taken on St. Joe marshes.

Gallinago delicata. Wilson Snipe. Rare fall migrant. One seen at meadows, Lake Coeur d'Alene, September 13, 1913. Two taken at Chatcolet Lake in September, 1914.

Actitis macularius. Spotted Sandpiper. Fairly common summer resident along shores of the lakes in Kootenai County. One taken at Fernan Lake, May 17. Nest with four eggs found in a field near Fernan Lake shore, June 27, 1914.

Squatarola squatarola. Black-bellied Plover. Rare. One specimen examined, taken on St. Joe marshes.

Oxyechus vociferus vociferus. Killdeer. Not common summer resident, breeding in suitable localities. Earliest record for spring arrival, March 9, 1913. None seen after September 1.

**Colinus virginianus.* Bob-white. Owing to nearness to Spokane Prairie, Washington, a number of pairs of quail have shifted into this vicinity, nesting in meadows and grain fields, and raising large broods; but owing to the open season during the month of November, and deep snow in winter, there is little chance of them becoming plentiful.

Dendragapus obscurus richardsoni. Richardson Grouse. Fairly common resident throughout the mountains; most plentiful in Coeur d'Alene National Forest reserve.

Bonasa umbellus togata. Canadian Ruffed Grouse. Common resident in coniferous timber and thickets. More abundant during the season of 1914 than for many years past.

**Bonasa umbellus sabini.* Oregon Ruffed Grouse. Observed for the first time during the fall of 1914. Two specimens taken and two others seen. Skins are identical with those taken in the vicinity of Portland, Oregon. With the exception of one specimen taken in deciduous thickets at Fernan Lake, this race was seen only in lodgepole pine thickets on the prairie, north of the city.

Pedioecetes phasianellus columbianus. Columbian Sharp-tailed Grouse. Becoming rare as a resident; occasionally seen in fall in small flocks on the prairie, north of the city.

**Phasianus torquatus.* Mongolian Pheasant. One specimen examined, found frozen in ice on Fernan Lake in December, 1913.

Zenaidura macroura marginella. Western Mourning Dove. Fairly common summer resident, nesting in pine timber on open ridges and hillsides. Congregates in small flocks on fields in latter part of August. Nest with two fresh eggs found in small pine on Tubbs Hill, June 26, 1912.

Cathartes aura septentrionalis. Turkey Vulture. Occasionally seen during the summer.

Circus hudsonius. Marsh Hawk. Not common resident and migrant; seen in Fernan alder swamp and at meadows, Lake Coeur d'Alene.

Accipiter velox. Sharp-shinned Hawk. Fairly common summer resident, remaining late in fall. A pair noted May 10, probably nested in dense fir timber on Fernan Ridge. Nest with five eggs on Tubbs Hill, June 15; young hatched during first week in July. Young taken in dense haw thicket on Fernan Creek, December 2.

***Buteo borealis calurus.** Western Red-tailed Hawk. Rare summer resident, a few pairs breeding in tall pines on the mountain sides. One specimen taken at Cougar Gulch, March 14, 1913. Food contents, small snake; from color of bits of skin judged it to be the common water snake.

Buteo swainsoni. Swainson Hawk. Rare. Three young specimens examined in September, 1913.

Archibuteo lagopus sancti-johannis. Rough-legged Hawk. Several seen along St.



Fig. 48. VIEW SHOWING GENERAL FEATURES OF THE MOUNTAINOUS COUNTRY AROUND COEUR D'ALENE, IDAHO; RIDGE IN FOREGROUND, ALTITUDE 4859 FEET, WAS SWEEPED BY FIRE IN 1910; GROWTH OF BLUEBERRY ON RIGHT-HAND, NORTH-FACING, SLOPE

Joe River late in fall. One specimen examined, taken along St. Joe River, December 20, 1912.

Haliaeetus leucocephalus. Bald Eagle. Rare resident. A few young seen in fall, but no adults for several years.

Falco mexicanus. Prairie Falcon. Rare. One specimen examined, taken November 6, 1912. (Recorded in CONDOR, xv, p. 41.)

***Falco columbarius columbarius.** Pigeon Hawk. Rare. One specimen examined, taken at Echo Bay, Lake Coeur d'Alene.

Falco sparverius phalaena. Desert Sparrow Hawk. Fairly common summer resident in timber along edge of prairie, west and north of the city.

Pandion haliaetus carolinensis. American Osprey. Not common summer resident, along rivers and lakes, nesting in tall cottonwoods.

Asio wilsonianus. Long-eared Owl. One specimen taken in dense fir near edge of swamp at meadows, Lake Coeur d'Alene, September 13, 1913.

Asio flammeus. Short-eared Owl. Not common. Two specimens examined.

**Scotiaptex nebulosa nebulosa*. Great Gray Owl. Rare winter visitor. One specimen taken at Mica Bay, Lake Coeur d'Alene, December 4, 1914; adult female.

Cryptoglaux funerea richardsoni. Richardson Owl. Rare winter visitor. One specimen seen.

Cryptoglaux acadica. Saw-whet Owl. One specimen examined.

**Otus flammeolus*. Flammulated Screech Owl. Not common. One specimen examined, taken in dense thicket near Fernan Lake, September 28, 1914.

Bubo virginianus pallescens. Western Horned Owl. Fairly common resident; most frequently seen in September and October.

Bubo virginianus subarcticus. Arctic Horned Owl. Rare fall and winter visitor. Two specimens examined, one taken at Bennett's Bay, Lake Coeur d'Alene, October 28, 1912. (Recorded in CONDOR, xv, p. 41.)

Bubo virginianus saturatus. Dusky Horned Owl. Frequently seen in the fall in dense timber and swamps. Four specimens examined, one taken near edge of swamp at meadow, Lake Coeur d'Alene, September 13, 1913.

Nyctea nyctea. Snowy Owl. Rare winter visitor. One specimen examined, taken in city limits.

Glaucidium gnoma. Pygmy Owl. Frequently heard and seen during the months of September and October; may be resident.

Ceryle alcyon. Belted Kingfisher. Common summer resident along streams and lake shores.

**Dryobates villosus monticola*. Rocky Mountain Hairy Woodpecker. Common resident throughout the heavy timber. Have often seen *D. v. monticola* feeding on frozen apples remaining on trees, during the cold weather, within city limits.

Dryobates pubescens homorus. Batchelder Woodpecker. Not common resident. Two specimens collected in alder swamp at head of Fernan Lake.

Picoides arcticus. Arctic Three-toed Woodpecker. Male and female collected from tall dead pine near Garwood, September 29, 1914; only specimens that I have seen or taken.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. Nest containing young found June 6, 1914, in tall hemlock stub near Kelly meadow, French Gulch. Both parents were busy feeding young. Several specimens collected; one near Fernan Lake in dense thicket, and one in alder thicket near Mica Bay.

Phloeotomus pileatus abieticola. Northern Pileated Woodpecker. Not common resident of the heavily timbered hillsides and ridges.

Colaptes cafer collaris. Red-shafted Flicker. Common summer resident, a few remaining through the winter. Winter records, November 28, December 8, February 10 and 22.

**Chordeiles virginianus henryi*. Western Nighthawk. Common summer resident, arriving the first week in June and departing by middle of September. Nests on Tubbs Hill, Fernan ridges, and occasionally on prairie land.

**Chordeiles virginianus hesperis*. Pacific Nighthawk. Female and eggs collected June 27, 1914; nesting on high open ridge near Fernan Lake.

Archilochus alexandri. Black-chinned Hummingbird. Not common summer resident. Nest with two eggs found on Fernan Creek, June 8.

Selasphorus rufus. Rufous Hummingbird. Occasionally seen in May and June in city limits among bright-colored flowers.

Stellula calliope. Calliope Hummingbird. Not common summer resident. Have observed several pairs that were nesting in dense pine thickets, but have been unable to locate any nests.

Tyrannus tyrannus. Kingbird. Not common summer resident, nesting in bushes along St. Joe and Spokane rivers.

Tyrannus verticalis. Western Kingbird. Rare summer resident. One pair with young; nest on cross-bar of pole carrying high tension electric wire, on prairie near Post Falls, July 5, 1913.

Sayornis sayus. Say Pewee. Not common summer resident; occasionally seen in city limits.

Nuttallornis borealis. Olive-sided Flycatcher. Not common summer resident in the mountains.

Myiochanes richardsoni richardsoni. Western Wood Pewee. Common summer resident, many nesting in pines in city limits.

Empidonax hammondi. Hammond Flycatcher. One specimen taken in alder thicket near Fernan Lake shore, August 1, 1914.

Empidonax wrighti. Wright Flycatcher. Not common summer resident in dense thickets. Specimen taken in dense fir thicket on Tubbs Hill, May 25, and in alder thicket in Fernan swamp, September 1.

Otocoris alpestris merrilli. Columbian Horned Lark. Common summer resident on the prairie, west and north of the city.

Pica pica hudsonia. Black-billed Magpie. Common fall and winter visitor, generally arriving early in September, remaining throughout the winter, and migrating early in spring. Earliest record of arrival, August 27, 1914.

Cyanocitta stelleri annectens. Black-headed Jay. Common resident; most numerous in dense wooded canyons and swamps.

Perisoreus canadensis capitalis. White-headed Jay. Not common resident in the mountains.

Corvus corax sinuatus. Western Raven. Three seen April 20, 1913; one specimen examined.

Corvus brachyrhynchos hesperis. Western Crow. Not common summer and fall resident of the St. Joe Valley.

Nucifraga columbiana. Clarke Nutcracker. Irregular fall and winter visitor; abundant during good cone seasons. Abundant from October, 1911, to December 28, 1912; none seen again until August 11, 1914, the earliest date I have noted them. As they feed principally on the seeds of the western yellow pine in this vicinity, the irregularity of occurrence could be caused by pine-cone crop, which is heavy every two to four years.

Dolichonyx oryzivorus. Bobolink. Rare summer resident of St. Joe marshes. Several seen in tall grass in meadow near Wolf Lodge creek.

**Xanthocephalus xanthocephalus*. Yellow-headed Blackbird. Rare summer resident of the marshes. Two specimens examined, taken on St. Joe marshes.

Agelaius phoeniceus neutralis. Columbian Red-wing. Not common summer resident; a few pairs nest in cat-tail marsh at meadow, Lake Coeur d'Alene.

Sturnella neglecta. Western Meadowlark. Common summer resident of the prairie west and north of the city. Earliest date of arrival, March 27. One seen October 31, on prairie near Post Falls.

Icterus bullocki. Bullock Oriole. Rare summer resident; one specimen seen.

Euphagus cyanocephalus. Brewer Blackbird. Not common summer resident; a few may remain throughout the winter. Small flock observed March 9, 1913, in tall



Fig. 49. NORTH FORK OF COEUR D'ALENE RIVER, ALTITUDE 2894 FEET, NEAR SOURCE IN COEUR D'ALENE MOUNTAINS, IDAHO

cottonwoods along bank of Spokane River; small flock seen in willow thicket, Fernan Lake, September 6.

Hesperiphona vespertina montana. Western Evening Grosbeak. Common resident. Large flocks frequently observed in city limits during the fall and winter, feeding in pines. Their loud whistling notes are often heard in the spring, after which they appear to break up into small flocks or pairs, and retire to the heavy timber in the mountains, returning again in large flocks the latter part of September. Male and female together noted August 19, on high wooded ridge near Fernan Lake. Flock of about 30 young seen September 1; one young female collected.

Carpodacus cassini. Cassin Purple Finch. One pair observed in city limits June 18, 1914.

Loxia curvirostra minor. American Crossbill. Common resident; numerous flocks seen in city limits throughout the fall and winter, retiring to the wooded hillsides during nesting season. Females with young able to fly noted May 4. February 21, 1913, I noted a pair of crossbills carrying nest material—long blades of dry grass obtained from small spots where the snow had melted—up into a dense-crowned tall lodgepole pine. I was unable to locate any nest, and on returning the next day failed to find any further evidence of nesting, not seeing the birds again in same locality.

Acanthis linaria linaria. Redpoll. Not common winter visitor. Small flock observed in city limits, April 15.

Astragalinus tristis pallidus. Western Goldfinch. Not common summer resident. A pair noted on brushy hillside, June 14; from their actions judged them to be breeding, but was unable to locate any nest.

Spinus pinus pinus. Pine Siskin. Abundant resident. Common in city limits; young Siskins able to fly, noted June 17.

**Passer domesticus*. English Sparrow. A small flock arrived in the spring of 1909. They have multiplied rapidly and are now very common within the city limits; also in other towns in the county. A favorite nesting site is the top fold of awnings after these have been rolled up during the winter. In the spring, when the sun grows bright and the awnings are lowered, sparrow nests in various stages of construction, eggs, and often young birds, are scattered along the edge of the street curbing.

Plectrophenax nivalis. Snowflake. Rare irregular winter visitor. One specimen seen.

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. Common summer resident of the meadows. Several specimens taken September 29, in small meadow near Garwood.

Zonotrichia leucophrys gambeli. Gambel Sparrow. Abundant fall migrant. Observed in large numbers during the months of September and October in thickets and on brushy hillsides.

Spizella passerina arizonae. Western Chipping Sparrow. Abundant summer resident. First arrivals noted by middle of April, becoming common by first of May. Young and old congregate in large flocks along edges of fields and thickets from early part of August to latter part of September, when they begin to migrate; one seen October 8. Nest with four eggs found in spirea bush, June 11; nest with half-grown young found in haw bush, June 14; young able to fly June 18.

**Junco hyemalis montanus*. Montana Junco. Common summer resident, arriving as early as February 22, becoming common by first week in April. Pair noted gathering nest material March 27; five nests, each containing five eggs, examined May 8; young able to fly, May 19; nest with five newly hatched young, June 18; nest with five fresh eggs, June 27. The Juncos begin to congregate in flocks along roadsides and thickets by the middle of August, and migrate early in October.

Melospiza melodia merrilli. Merrill Song Sparrow. Common summer resident in swamps and thickets along mountain streams and lakes. A few remain throughout the winter in sheltered situations. Often seen around old brush-piles and outbuildings within the city limits during the winter.

**Melospiza lincolni lincolni*. Lincoln Sparrow. One specimen taken in grassy meadow near Garwood, September 29, 1914.

Pipilo maculatus montanus. Spurred Towhee. Common summer resident of the brushy hillsides and draws, arriving by April 15. Last seen September 3. Young, first brood, able to fly, May 18; second brood, June 30,

Zamelodia melanocephala. Black-headed Grosbeak. Not common summer resident; most frequently observed in coniferous timber in canyons near east end of Fernan Lake.

Piranga ludoviciana. Western Tanager. Not common summer resident of the coniferous timber.

Petrochelidon lunifrons lunifrons. Cliff Swallow. Common summer resident, nesting under eaves.

Hirundo erythrogastra. American Barn Swallow. Fairly common summer resident. Migration dates, May 28-30, first week in September.

Iridoprocne bicolor. Tree Swallow. Common summer resident, nesting in cottonwoods along river and lake shores.

Riparia riparia. Bank Swallow. Not common summer resident. Small colony nests in banks of deep sand-pit and railroad, within the city limits.

Bombycilla garrula. Bohemian Waxwing. Common fall and winter visitor. Large flocks seen in city limits from latter part of November to middle of December, feeding on mountain ash berries. Many mountain ash are used as shade and ornamental trees in the city. Migration dates, November 18 and March 4.

Bombycilla cedrorum. Cedar Waxwing. Not common summer resident. Nest with three fresh eggs, seven feet from ground in haw bush, Fernan Creek, June 28.

Lanius borealis. Northern Shrike. Rare winter visitor. One seen at Kelly meadow in January, 1913; one seen in city limits, December 21, 1914.

Vireosylva olivacea. Red-eyed Vireo. Common summer resident of the deciduous thickets. Nest with four eggs, incubation slight, in red osier five feet from ground in alder swamp, at east end of Fernan Lake, June 27.

Vireosylva gilva swainsoni. Western Warbling Vireo. Common summer resident of the thickets.

Lanivireo solitarius cassinii. Cassin Vireo. Not common summer resident of the dense thickets.

Dendroica aestiva. Yellow Warbler. Common summer resident of the brushy hillsides. Nest with four eggs found in spirea bush on Tubbs Hill, June 11. Young Yellow Warblers able to fly, June 14.

Dendroica auduboni auduboni. Audubon Warbler. Abundant summer resident, nesting in coniferous timber on hillsides. Common in city limits after young are able to fly. Departs early in October.

Dendroica townsendi. Townsend Warbler. Not common summer resident in dense thickets and timber. Specimen taken in an alder thicket at Fernan Lake, June 28.

Oporornis tolmiei. Tolmie Warbler. Not common summer resident in swampy thickets. Several seen on brushy hillsides.

Geothlypis trichas occidentalis. Western Yellow-throat. Not common summer resident in deciduous thickets in vicinity of water.

Setophaga ruticilla. American Redstart. Fairly common summer resident in deciduous thickets.

Anthus rubescens. American Pipit. Not common fall migrant.

Cinclus mexicanus unicolor. American Dipper. Not common, but of regular occurrence along mountain streams. One seen along Fernan Creek, October 25.

Dumetella carolinensis. Catbird. Not common summer resident; nesting in willow thickets; young able to fly, July 10.

Troglodytes aedon parkmani. Western House Wren. Not common summer resident; often found nesting in old vacant buildings within the city limits.

Nannus hiemalis pacificus. Western Winter Wren. Fairly common resident in coniferous timber. Frequently observed in dense deciduous thickets and swamps.

Certhia familiaris montana. Rocky Mountain Creeper. Not common resident in coniferous timber. Specimen taken December 29; occasionally seen during the summer.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Not common resident of coniferous timber. Occasionally seen within the city limits.

Sitta canadensis. Red-breasted Nuthatch. Common resident; frequently observed in pine thickets within the city limits.

Sitta pygmaea. Pygmy Nuthatch. Abundant resident. Common within the city limits. Several pairs noted nesting in tops of telephone poles.

***Penthestes atricapillus septentrionalis.** Long-tailed Chickadee. Common resident; frequently seen in city limits. Nest with seven eggs in birch stub on French Gulch Creek, May 30.

Penthestes gambeli gambeli. Mountain Chickadee. Abundant resident; common within the city limits.

Penthestes rufescens rufescens. Chestnut-backed Chickadee. Not common resident. Occasionally seen in alder swamp at east end of Fernan Lake.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. Abundant resident of coniferous timber and thickets.

Myadestes townsendi. Townsend Solitaire. Not common winter visitor. Specimens collected in city limits, January 10, 1913.

Hylocichla ustulata swainsoni. Olive-backed Thrush. Common summer resident of the dense thickets. Nest with four fresh eggs in small fir tree on brushy hillside, June 27.

**Hylocichla guttata guttata*. Alaska Hermit Thrush. Several seen in dense thickets in September; specimens collected September 12 and 24.

Planesticus migratorius propinquus. Western Robin. Abundant summer resident; a few may remain during mild winters. Earliest migration date, February 11; fall migration in October.

Ixoreus naevius naevius. Varied Thrush. Fairly common resident, preferring dense thickets along canyon streams and swamps.

Sialia mexicana occidentalis. Western Bluebird. Common summer resident. Spring migration, first week in March; fall, middle of October.

Sialia currucoides. Mountain Bluebird. Common summer resident, arriving the first week in March. Fall migration in October.

Coeur d'Alene, Idaho, January 5, 1915.

FROM FIELD AND STUDY

A Northern Winter Record of the Phainopepla.—On February 12, 1915, after a severe and protracted storm, I collected an adult female Phainopepla (*Phainopepla nitens*) within the city of Marysville, California. The species is rare in this vicinity; even in summer its appearance is quite casual. When discovered, this individual was feeding upon a cluster of mistletoe berries in a black walnut tree. It was not particularly shy and was reluctant to desert such an excellent feeding ground, as I found when I attempted to frighten her from the place. She refused to leave, and, after circling widely, returned to the tree. Examination of the bird in hand showed it to be in apparent good health, and the body was very fat. The stomach was distended with the mistletoe berries.—CARL S. MULLER, *Marysville, California*.

Three New Records for Kansas.—In a preliminary examination of a collection of bird skins made personally at Independence, southeastern Kansas, in 1904 and 1905, three forms have been identified that apparently have not been previously recorded from that State. All are Lower Austral forms ranging up from the south along the valley of the Verdigris River.

A Flicker (male, no. 584, coll. A. W.), taken November 28, 1904, is *Colaptes auratus auratus*, as it has a wing measurement of only 151.3 millimeters. The Northern Flicker occurs also as a winter migrant, and is represented by specimens in the collection.

Two Downy Woodpeckers secured are *Dryobates pubescens pubescens*. These specimens have the following measurements (in millimeters):

	Wing	Tail
No. 683 (coll. A. W.), male, Jan. 3, 1905.....	87.8	53.5
No. 783 (coll. A. W.), female, March 1, 1905.....	88.5	57.0

The Chickadees from this region are of more interest. Thirteen were secured, ranging in dates from December 5, 1904, to April 27, 1905, and all are referred to *Penthestes carolinensis agilis*. The northern limit of the Texas Chickadee has been given as Stillwell and Fort Reno, Oklahoma (Ridgway, *Birds of North and Middle America*, vol. III, p. 406). These Kansas records, therefore, constitute an important extension in the known range of this form.—ALEX WETMORE, *Biological Survey, Washington, D. C.*

Red Phalaropes Near Corona, California.—Two male Red Phalaropes (*Phalaropus fulicarius*) were shot November 7, 1914, on one of the ponds of the Pomona Recreation Club, which is situated near the Santa Ana River, about eight miles north of Corona, Riverside County, California. The two birds are now numbers 506 and 507 of my collection. It would seem that this is worthy of note since this species usually migrates over the ocean, and this locality where they were taken is a considerable distance inland.—WRIGHT M. PIERCE, *Claremont, California*.

Some Extreme Nesting Dates.—In comparing Willett's *Birds of the Pacific Slope of Southern California* with some of my own notes, I find the following nesting dates among the latter, that appear somewhat unusual:

Selasphorus alleni. Allen Hummingbird. Catalina Island, March 22, 1910; two eggs, incubation advanced.

Sturnella neglecta. Western Meadowlark. Los Angeles, February 15, 1909; four eggs, fresh.

Hirundo erythrogastra. Barn Swallow. Balboa Beach, June 13, 1908; two eggs, fresh.

Riparia riparia. Bank Swallow. San Pedro, April 26, 1908; five eggs, incubation advanced.

Lanius ludovicianus gambeli. California Shrike. Los Angeles, February 8, 1908; four eggs, fresh.—D. I. SHEPARDSON, *Los Angeles, California*.

Yellow-billed Loon:—A Correction.—In writing the life history of the little-known species *Gavia adamsi*, I have been puzzled to know what to do with the supposed Colorado record of this species. I have always suspected that the record was based on erroneous identification, as Colorado is so far away from the known range or migration route of this Arctic Loon.

The specimen upon which the record was based was taken by Mr. William G. Smith, near Loveland, Colorado, on May 25, 1885. A letter from Mr. Smith to Major Bendire, giving the details of its capture, is now in my hands and states that the bird was sold to Mr. Manly Hardy of Brewer, Maine, now deceased.

Knowing that the Hardy collection was recently purchased for the Rhode Island Audubon Society and is now in the Park Museum in Providence, I wrote to my friend, Mr. Harry S. Hathaway, of that city, for his opinion as to the identity of the specimen. He very kindly investigated the matter and sent me his report, together with a letter on the subject from Mrs. Fanny Hardy Eckstorm, which strengthened my doubts and practically convinced me that the record was based on an error.

For my own personal satisfaction, I went to Providence and examined the specimen with Mr. Hathaway. It is not a Yellow-billed Loon, but it is a very curious specimen of a Common Loon (*Gavia immer*), and I am not surprised that Mr. Hardy and others who have seen it have been puzzled. Its entire plumage is decidedly worn, and faded to a dull brownish shade. It is a young male in the immature plumage of the first year. Its bill is certainly yellow, the yellowest or lightest colored bill I have ever seen in any young Loon, which probably led to its identification as *Gavia adamsi*; but the size and shape of the bill agrees with *Gavia immer* and not with *G. adamsi*. The culmen measures about 3.20 inches, and the depth of the bill at the base is about .90. Ridgway's *Manual* gives, for *adamsi*, culmen 3.50 to 3.65, and depth 1.00 to 1.20, and for *immer*, culmen 2.75 to 3.50 and depth .90 to 1.05 inches. The bird in question is small, even for *Gavia immer*, notwithstanding the fact that it is a male, and it has a particularly slender bill, even for that species, instead of the large, heavy bill, with the straight culmen so characteristic of *Gavia adamsi*.

It is only fair to Mr. Hardy to say that he was in doubt about the bird and that the record never ought to have stood without verification. I cannot understand why some one who was competent to identify the bird, did not examine the specimen before the record was published, which would have prevented the frequent repetition of an error which can never be wholly rectified. Such errors are far too common and I hope that this one will be corrected in the next edition of the A. O. U. *Check-List*.—A. C. BENT, *Taunton, Massachusetts*.

A Remarkable Flight of Sparrow Hawks.—While travelling north on the Santa Fe Railway above Albuquerque, New Mexico, along the Rio Grande River, in the late afternoon of September 13, 1914, an enormous flight of Western Sparrow Hawks (*Falco sparverius phalaena*) was passed. Thousands sailed by in a continuous stream, all working leisurely south, often a hundred or more in sight from the car window at one time. Individuals frequently alighted on convenient trees and telegraph poles, and all seemed on the lookout for food. The flight seemed to be confined to the vicinity of the river and its adjacent thickets of rank weeds and willows interspersed with stretches of green meadow and alfalfa.

A very few larger hawks were seen, but whether migrating with the Sparrow Hawks, or not, could not be determined. Of these, a Prairie Falcon, a dark Swainson Hawk, and a male Marsh Hawk were identified.

As no specimens were taken it is probably presuming to state positively that these were the Western variety. Why shouldn't they be Eastern, or even both Eastern and Western, drawn together from a vast expanse of barren territory along the converging tributaries of the Rio Grande River, and held in a concentrated flight by the grasshoppers and mice so abundant in this oasis strip?

Travelling south along the Rio Grande river on the morning of September 15th, two days later, in the vicinity of Rincon, New Mexico, some two hundred miles farther south, not a trace of this flight was left. Or had the birds not yet arrived?—J. EUGENE LAW, *Hollywood, California*.

Black-and-White Warbler at Berkeley, California.—March 18, 1915, a female Black-and-White Warbler (*Mniotilta varia*) was noted in a large live oak tree on the lower part of the University of California campus. When first seen, against a strong light, its colors could not be made out, but its actions resembled those of a creeper. Later it was seen under more favorable conditions. The strikingly contrasted black and white striping on the upper surface and the unmarked under parts (indicative of the female), the zigzag hopping movement along the larger limbs and short circling flights were all then clearly noted. Compared with other warblers occurring on the campus it seems to spend more of its time on the under surface of large limbs. A faint call note was the only sound heard. Mr. A. C. Shelton and Mr. E. P. Rankin were present at the time the bird was seen and we all immediately repaired to the Museum of Vertebrate Zoology and verified the identification by examining skins of this and other species. To my knowledge this is the fifth record of the species for California.—TRACY I. STORER, *Berkeley, California*.

Early Spring Notes from West-Central California.—The following are some data picked up this spring (1915) at odd moments during my regular work along railroad lines.

February 19. On train along south shore of San Pablo Bay from Oakland to Port Costa. Estimated number of ducks seen feeding close to shore, 5920. About 90 per cent of these appeared to be Canvas-backs, the remaining 10 per cent Blue-bills. This estimate did not include the thousands lying out on the bay, but only those close to shore.

March 18. A little east of Altamont, Alameda County. Nest of California Shrike in eucalyptus at deserted farm; placed about seven feet above the ground upon the main trunk, which had been cut off, and between the surrounding aftergrowth; contained six young about one week old.

March 31. Eliot Gravel Pit, near Pleasanton, Alameda County. A nest of the Mourning Dove built on the steeply sloping gravel surface of the steam shovel cut; situation notably exposed; contained two eggs about to hatch. On same day saw a pair of Yellow-headed Blackbirds in vicinity of a railroad barrow-pit filled with water.

April 7. Cayley, near Altamont pass, Alameda County. Young California Horned Larks barely able to fly, indicating an early date of nesting.

April 8. Altamont, Alameda County. Nest of Mourning Dove on the ground, containing two incubated eggs.—L. P. BOLANDER, *Oakland, California*.

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EDITORIAL NOTES AND NEWS

The annual Cooper Club roster published in this issue shows a present membership of 6 honorary, 4 life, and 535 active members, considerably more than for any previous year. It is requested that any errors in the roster be promptly reported to one or the other of the Club secretaries.

At least two active ornithologists are directing their attention to Alaska this year. Mr. F. Seymour Hersey, of Taunton, Massachusetts, has left Seattle for St. Michael, on Behring Sea, to collect specimens, and especially to take photographs, during the summer, in the interests of Bent's "Life Histories of North American Birds". Mr. Hersey will thus be working from the same base that Nelson did thirty-five years ago. Mr. George Willett has left California to spend another summer on Forrester Island, southeastern Alaska, where a very great deal doubtless yet remains to be learned concerning the hordes of water birds which resort to that isolated locality for the nesting season. We hope that he succeeds in finding the eggs of the long-sought-for Marbled Murrelet!

Those of us who have the museum instinct well developed are often pained to read in

a collector's narrative that some rare specimen has been thrown away as being "too far gone to skin". There is increasing need for osteological material, and it is a shame that any perfectly good specimens for such purposes should be destroyed. It is a very simple matter to remove the major portion of the soft parts from a dead bird, wrap in the feet and head with a little thread or twine, and hang it up to dry; or else to roll it in dry cornmeal, which will retard decay, and ship it at once to some museum. Of course a tag should be affixed, giving the sex, as ascertained by dissection, exact locality, date, and name of collector. Bodies of skinned birds might well be saved in similar fashion. As previously stated in these columns, it is becoming more and more incumbent upon the collector of birds to justify the privilege he enjoys, by making the greatest possible use of the material he gathers.

On another page of this issue Mr. A. C. Bent does American ornithology an excellent service by correcting an important error in identification, by reason of which error a record of occurrence far beyond the normal range of the species in question has stood in our literature for many years. We can see no reason for attempting to defend the perpetrator of any erroneous record, where such has been made without exhausting every reasonable means of verification. As Mr. Bent says, it is lamentably difficult to eliminate a faulty record from our literature. It is vastly better to make every possible effort toward accurate determination of both the circumstances of capture and the identity of the species before venturing into print. In this day of many museums, and with willing experts whose services may be elicited in making comparisons of specimens, it looks as though we ought to be able to escape such blunders.

It is with the deepest regret that we announce the death of an active Cooper Club man, F. E. Newbury. This took place at his home in San Francisco on March 16, 1915. Mr. Newbury came to California from the East in 1903, and located in San Francisco as an optician, in which profession he was very successful. We learn through Mr. Harry S. Hathaway of Providence, R. I., a long-time friend of Newbury, that the latter was a man of quiet, unassuming manner, who loved his friends, home and family above all else. He was an agreeable companion and a hard worker in the field. He studied birds and collected birds' eggs, chiefly for recreation, and had gathered a not large, but decidedly choice series of personally collected sets.

Harry K. Pomeroy, an active member of the Cooper Ornithological Club died at his home in Kalamazoo, Michigan, on January 27, 1915. Pomeroy was born in Lockport,

New York, April 3, 1865, and moved to Kalamazoo in 1872. His favorite study was ornithology, and his collection of birds, nests, and eggs is one of the best in his State. The many friends who enjoyed the privilege of Pomeroy's acquaintance bear witness to his kindly nature and earnest helpfulness. Although always residing in the East, he was deeply interested in Western ornithology, and followed closely the results of the work of others, as reported in current magazines.

Dr. Barton W. Evermann and Mr. Joseph Mailliard spent a week in April in the Kern Valley district of the extreme southern Sierra Nevada. Their prime object was to learn further details of the manner of occurrence of the remarkably restricted Kern Red-winged Blackbird, lately described by Mr. Mailliard. The trip was a success, and the results will be reported in due time.

COMMUNICATION

BECK AT CAPE HORN

Editor THE CONDOR:

Having rounded the Horn safely in our twelve-ton cutter, and being anchored within fifteen miles of that well-known landmark waiting for one of the ordinary gales to let up, a line to you will pass away a few minutes until the candy boiling on the floor of the cabin on a seventy-eight-cent oil stove bought in San Francisco is pronounced by Mrs. Beck ready for eating. We passed somewhat closer to Cape Horn than do most of the passers-by, going inside the two outer rocks which lie a half mile or so to the southward.

The blue-eyed, white-breasted cormorants were nesting on a pinnacle rock to the westward, recalling the murre rookeries of Alaskan islands. Albatrosses and sooty shearwaters sailed high and low about us. Skuas flew by in rapid flight to some distant fishing point, and frequently penguins would show for a brief moment above the choppy sea.

If the captain of the boat had not been so anxious to take me back alive to Punta Arenas, I might have landed and gone up on top of the Horn for a look around; but the uncertainty of the winds and their rapid changing from one point to another, as well as the sudden manner in which they increase most forcefully in strength, prevented. As it was, the nice breeze we had, picked up after dinner into half a gale, and it felt most comfortable to run into a sheltered cove and anchor.

In the last five weeks, three days have passed without rain, snow or hail, and I'm hoping for as many more on the return trip. Some days but a squall or two, and others a continual drizzle, makes the raincoat constantly necessary. Compared with the off-shore ranging of the common California albatross, the fishing here by the common albatross in these southern channels bordered on either side by snow-topped hills is interesting. The island land-bird life is rather barren though, as compared with the Aleutian Islands of Alaska. One misses the ptarmigan, the cheery snowflake and the brightly colored leucosticte, although the latter has a counterpart here in a rarely noticed, black-chinned finch that inhabits rocky hillsides. Sea-birds are plentiful, and I have seen nesting colonies of terns, gulls, shags, penguins, shearwaters, and albatrosses.

Sincerely,

R. H. BECK.

Cape Horn, Chili, January 3, 1915.

PUBLICATIONS REVIEWED

REPORT ON BIRDS COLLECTED AND OBSERVED DURING APRIL, MAY, AND JUNE, 1913, IN THE OKANAGAN VALLEY, FROM OKANAGAN LANDING SOUTH TO OSOYOOS LAKE. By E. M. ANDERSON. (Report of the Provincial Museum of Natural History for the year 1913, Victoria, British Columbia, Jan., 1914, pp. 7-16.)

REPORT OF BIRDS COLLECTED AND OBSERVED DURING SEPTEMBER, 1913, ON ATLIN LAKE, FROM ATLIN TO SOUTH END OF THE LAKE. By F. KERMODE and E. M. ANDERSON. (*Ibid.*, pp. 19-21.)

BIRDS COLLECTED AND OBSERVED IN THE ATLIN DISTRICT, 1914. By E. M. ANDERSON. (Report of the Provincial Museum of Natural History for the year 1914, Victoria, British Columbia, January, 1915, pp. 8-17.)

The lists contained in the above cited papers include what may be accepted as practically complete catalogues of the summer birds of the regions treated. As little or nothing has been published heretofore regarding the birds of the Atlin district and of Okanagan Valley, of extreme northern and extreme southern British Columbia, respectively, these contributions are consequently of importance, and as evident care was taken in the collection and proper identification of specimens, they may be taken as authoritative.

From Okanagan Valley one hundred and twenty-nine specimens are listed; from the

Atlin district, eighty-four summer birds and thirty-five in the September list. Some species were found new to British Columbia, and there are many records of interest as regards distribution. The comments under each species are condensed, including little more than brief statements of the manner of occurrence. On pages 17 and 18 of the 1914 report is a list of errata in the Okanagan paper. These are mostly corrections of names used, in most instances closely related subspecies having been confused.

It seems a pity that papers of such value and of such general interest should be buried in museum reports where they are lost to those most interested. They have evidently escaped the notice of even so thorough and careful a searcher of ornithological literature as is the reviewer of the *Auk*! Also but scant justice is done to either collection or author, for statements must be condensed to the utmost, and many interesting phases of the collections passed over without comment. The exceedingly brief account of the nesting of the Bohemian Waxwing in the Atlin district, where four sets of eggs were found, is but one instance of many, of facts of life history, manner of occurrence, etc., that would bear carefully detailed treatment. In these same annual reports there are included similarly abbreviated lists of mammals, insects, etc., from the Atlin and Okanagan districts.

While the subject matter of these various lists is, as far as it goes, evidently authoritative and a welcome addition to our knowledge of the biota of the regions involved, the editorial treatment of the papers can not be commended. While care has been taken to ascertain the proper names of the species listed, punctuation and general typographical treatment of these names is not uniform, nor do they accord with current usage. Also there are many errors of typography throughout the several papers.—H. S. SWARTH.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JANUARY.—The regular monthly meeting of the Northern Division was held at the California Museum of Vertebrate Zoology, Berkeley, January 21, 1915, at 8 p. m. President Bryant was in the chair with the following members present: Mesdames Allen, Bryant, Grinnell and Schlisinger, the Misses Andrews, Atsatt, Conger, Dolbear and Wythe, and the Messrs. Bolander, Camp,

Carriger, Dice, Evermann, Grinnell, Joseph Mailliard, McAtee and Storer. Visitors present were: Mr. and Mrs. Newberry, Mrs. Kluger, Miss Dora Lemon, and Mr. F. Martens.

The Northern Division December, 1914, minutes were read and approved and the Southern Division December minutes were read. The following were elected to membership: J. N. Kendall and the seven persons proposed by the Southern Division in November. The following applications for membership were read: J. H. Paul, 1320 East 2d Street South, Salt Lake City, Utah, by A. O. Treganza; Irwin C. Schumacher, Yuba City, and G. F. Sutherland, East Hall, University of California, Berkeley, both proposed by A. L. Barrows, and two received by the Southern Division in December. The resignation of Mr. Charles H. Richardson was accepted.

A written communication from Mr. W. Otto Emerson was received asking that the Club endorse a movement to have ornithology made a required subject in the grammar schools. The matter was laid on the table.

Election of officers resulted as follows: President, Joseph Mailliard; Vice-president, Walter K. Fisher; Secretary, Tracy I. Storer. For the offices of Editor of the *CONDOR* and Business Managers the present incumbents were re-elected, namely, Joseph Grinnell, editor; W. Lee Chambers and J. Eugene Law, business managers.

Tracy I. Storer gave a short demonstration of a new method of photographing freshly killed specimens of animals.

H. C. Bryant briefly summarized the changes in game laws proposed in the California Legislature. Shorter seasons, smaller bag limits, and extending a measure of protection to species not now protected, are the important changes to receive attention.

The Division was fortunate in having Mr. W. L. McAtee of the Bureau of Biological Survey present. Mr. McAtee spoke of the economic work being done by the Survey on birds. A re-examination of the Crow and English Sparrow problems, investigation of disease among ducks on inland bodies of water in the West, studies of the food habits of thrushes, swallows, wrens, thrashers and titmice, also nighthawks and poor-wills, the damage being done to the oyster industry in Washington, the damage done by sap-suckers to forest trees, and the special methods to be used in attracting birds in different parts of the United States, are some of the problems which the economic ornithologists of the Survey have been or are now working upon. A general discus-

sion followed. Adjourned.—TRACY I. STORER, *Secretary*.

FEBRUARY.—The regular monthly meeting of the Northern Division was held at the California Museum of Vertebrate Zoology, Berkeley, February 18, 1915, at 8 p. m. In the absence of both President and Vice-President, Mr. H. C. Bryant presided. The following members were present: Mesdames Bryant and Grinnell, the Misses Andrews, Culver and Dolbear, and the Messrs. Bolander, Carriger, Grinnell, Heinemann, Kendall and Storer. Five visitors were present.

The minutes of the Northern Division January meeting were read and approved and the minutes of the Southern Division Special Meeting read. The first minutes of the Inter-mountain Chapter at Salt Lake City, Utah, were received and read with much interest. J. H. Paul, I. C. Schumacher, and G. F. Sutherland, and two persons proposed by the Southern Division in December were elected to membership. The proposal of Mr. Fred. W. Chambers, 701 Walker Bank Building, Salt Lake City, Utah, from Mrs. A. O. Treganza was received.

H. C. Bryant briefly described the progress of game legislation in the present session of the legislature.

Tracy I. Storer read two shore-bird biographies prepared in connection with the work of Grinnell, Bryant and Storer on the game birds of California. The species considered were the Wilson Snipe and Avocet.

L. P. Bolander exhibited a beautiful skin of an adult male American Merganser. Adjourned.—TRACY I. STORER, *Secretary*.

MARCH.—The regular monthly meeting of the Northern Division was held at the California Museum of Vertebrate Zoology, Berkeley, California, March 18, 1915, at 8 p. m. President Joseph Mailliard was in the chair with the following members present: Mesdames Allen and Grinnell, the Misses Andrews, Atsatt, Culver and Dolbear, and the Messrs. Bolander, Bryant, Camp, Carriger, Dice, Evermann, Grinnell, J. C. Johnson, Kendall, Shelton, A. G. Smith, Storer, Trenor and Weed. Five visitors were present.

The minutes of the Northern Division February meeting were read and approved and the Southern Division February minutes read. Mr. Fred W. Chambers was elected to membership. The following applications for membership were received: Mrs. Mary Van E. Ferguson, 5 Panoramic Way, Berkeley, proposed by Mrs. James Allen, and twenty-two persons proposed at the Southern Division February meeting.

Mr. Joseph Grinnell presented the Business Managers report for 1914. The report was received with great interest. Older members commented very favorably upon the excellent progress in business management shown by the figures presented. President Joseph Mailliard outlined the progress of plans for the A. O. U. meeting in San Francisco during May. Dr. B. W. Evermann very kindly offered the use of the rooms of the California Academy of Sciences for Cooper Club meetings in San Francisco.

Mr. A. C. Shelton, Field Naturalist of the University of Oregon, spoke on "Field Work in Oregon", outlining the general biotic divisions of the State and recounting some of the more interesting incidents in his work of the past year. Mating habits of Pileated Woodpeckers were observed, winter specimens of Pine Grosbeak taken, as well as breeding specimens and a nest of the Crossbill. A discussion followed. Adjourned.—TRACY I. STORER, *Secretary*.

SOUTHERN DIVISION

FEBRUARY.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, February 25, 1915. President Law was in the chair and the following members in attendance: Mrs. Gertrude Husher, Miss Claire Germain, and Messrs. Barnes, Blain, Brown, Chambers, Colburn, Daggett, Edwards, Fischer, Granville, Hegner, Howell, Holland, Alphonse Jay, Antonin Jay, Jewett, Little, Miller, Morcom, Nokes, Rich, Robertson, Swarth, Wood and Wyman. Visitors present were Mrs. George Wood and Mrs. H. Mullin.

The Southern Division minutes for December, 1914, and for the special meeting of January 22, 1915, were read and approved. No regular meeting was held during January. Northern Division minutes for December, January and February were read, and also the first minutes received, for the February meeting, of the newly formed Inter-mountain Chapter of Salt Lake City, Utah. New members elected were J. N. Swift, Stockport, Ohio, and W. A. Ford, Umatilla, Oregon. A motion was also passed electing to membership those whose names were approved in the Northern Division meetings of December, January and February. New names were presented as follows: M. P. Skinner, Yellowstone Park, Wyoming; W. S. Richmond, Batavia, N. Y.; H. K. Job, West Haven, Conn.; J. Kittredge, Jr., Missoula, Mont.; G. C. Cantwell, Puyallup, Wash.; H. H. Mitchell, Regina, Saskatchewan, Canada;

H. C. Sprunger, Wickenburg, Arizona; H. W. Brandt, Cleveland, Ohio; all the above proposed by W. Lee Chambers. Edward J. Brown, Los Angeles; Clarence E. Smith, Woody; George Polkinghorn, Los Angeles; M. C. Badger, Santa Paula; proposed by A. E. Colburn. T. C. Stephens, Sioux City, Iowa, and Wm. H. Nevin, Pasadena, proposed by A. B. Howell. L. A. Tope, Clearfield, Iowa, by O. E. Baynard; M. R. Cheesman, Murry, Utah, by A. O. Treganza; T. T. Gillette, Pasadena, by H. A. Edwards; H. S. King, Gardena, by A. Cookman; J. A. Weber, Palisades Park, N. Y., by L. E. Wyman; W. A. Goelitz, Ravinia, Ill., by W. A. Strong; E. S. Coombs, Boston, Mass., by D. I. Shephardson; E. M. Anderson, Victoria, British Columbia, Canada, by H. S. Swarth. The resignations of Miss Edith S. Waterman, Alameda, and Robert B. Rockwell, Denver, Colorado, were read and accepted. The annual financial report of the business managers, covering the year 1914, was read and accepted. This ended the business before the meeting.

Mr. R. Magoon Barnes talked at some length, and most entertainingly, on certain phases of the work of keeping wild ducks, geese and swans in captivity, in which he is an acknowledged authority. His comments upon the Trumpeter Swan in particular brought home to those present many facts regarding this rare and little known bird which most of us either did not know or imperfectly realized. Mr. Fred Granville, recently returned from a trip to northern Alaska and Siberia, had on exhibition three skins of the Ross Rosy Gull (*Rhodostethia rosea*), adults and immatures, and two adults of the Spoon-billed Sandpiper (*Eury-norhynchus pygmeus*), together with photographs of other species of birds, nests and eggs. Dr. L. H. Miller exhibited an interesting series of bird photographs, mostly of exotic species; and Mr. Hegner showed pictures of winter scenes in some of the more remote parts of the San Gabriel Mountains. Mr. J. E. Law displayed a selection of specimens exhibiting most of the plumages of the Pacific species of Murres, Auklets, and Murrelets. Adjourned.—H. S. SWARTH, *Secretary*.

MARCH.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, March 25, 1915. President Law was in the chair and the following members were present: Mrs. Gertrude Husher and Messrs. Blain, Brown, Daggett, Holland, Jewett, Little, Morcom, Nokes, Rich, Snyder,

Swarth, Willett and Wyman. Mrs. Law was a visitor. The minutes of the February meeting were read and approved, followed by the reading of the March minutes of the Northern Division and of the Inter-Mountain Chapter.

The following new members were elected: L. A. Tope, T. C. Stephens, Clarence E. Smith, H. C. Sprunger, W. S. Richmond, M. P. Skinner, Ernest M. Anderson, Edward S. Coombs, Walter A. Goelitz, J. A. Weber, Harold L. King, Thurlow T. Gillette, M. R. Cheesman, Wm. H. Nevin, M. C. Badger, George Polkinghorn, H. W. Brandt, H. H. Mitchell, George G. Cantwell, Joseph Kittredge, Jr., Herbert K. Job, and Edward J. Brown.

New names were presented as follows: Miss Ellen G. Scott, Tropico, Calif., and Mrs. Katherine S. Wakeley, Los Angeles, both presented by A. E. Colburn; J. Frank Wilson, Monrovia, Calif., and Charles O. Trowbridge, Farmingham Center, Mass., by W. Lee Chambers.

A communication was read, received from Mr. A. B. Howell and dealing with the problem of bird banding. L. E. Wyman was appointed to take charge of the matter and see what could be done toward arousing the interest of Club members in this work. Adjourned.—H. S. SWARTH, *Secretary*.

DIRECTORY OF MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB

Revised to May 1, 1915

(Residence in California unless otherwise stated. Year following address indicates date of election. Star preceding name indicates life member.)

HONORARY MEMBERS

Allen, Dr. J. A., American Museum of Natural History, New York, N. Y. 1910.
Beal, Prof. F. E. L., Biological Survey, U. S. Dept. Agriculture, Washington, D. C. 1910.
Belding, Lyman, Stockton. 1896.
Merriam, Dr. C. Hart, 1919 16th St., Washington, D. C. 1909.
Ridgway, Robert, 3306 New Hampshire Ave., N. W., Washington, D. C. 1905.
Stephens, Frank, 3746 Park Blvd., San Diego. 1912.

ACTIVE MEMBERS

Adam, Frederick, 603 Vassar St., Tropico. 1914.
Adams, Ernest, Carlotta, Humboldt Co. 1896.

- Alexander, Annie M., 92 Seaview Ave., Piedmont. 1908.
- Alkire, W. H., 1756 Edgemont St., Hollywood. 1914.
- Allen, Amelia S., Mosswood Road, Berkeley. 1913.
- Allen, Arthur A., McGraw Hall, Ithaca, N. Y. 1911.
- Anderson, Ernest M., Provincial Museum, Victoria, B. C., Canada. 1915.
- Anderson, Malcolm P., Menlo Park. 1901.
- Andrews, Edna A., 2233 Ellsworth St., Berkeley. 1914.
- Appleton, J. S., Simi, Ventura Co. 1901.
- Armstrong, Edward E., 207 N. Michigan Ave., Chicago, Ill. 1914.
- Arnold, E., Freight Claim Agt., Grand Trunk Ry., Montreal, Quebec, Canada. 1909.
- Arnold, Ralph, 917 Union Oil Bldg., Los Angeles. 1893.
- Arnold, W. W., 504 N. Nevada Ave., Colorado Springs, Colo. 1911.
- Atkinson, W. L., 35 Hawthorne Way, San Jose. 1901.
- Atsatt, Sarah R., 345 S. Serrano Ave., Los Angeles. 1911.
- Averill, E. F., Pendleton, Oregon. 1914.
- Bade, Wm. F., 2616 College Ave., Berkeley. 1903.
- Badger, M. C., Santa Paula. 1915.
- Bagley, J., Box 46, Eureka. 1913.
- Bailey, Bernard, R. D. 1, Elk River, Minn. 1911.
- Bailey, Florence M., 1834 Kalorama Road, Washington, D. C. 1910.
- Bailey, Henry F., 94 Pacific Ave., Santa Cruz. 1914.
- Bailey, H. H., Box 154, Newport News, Va. 1903.
- Bailey, Vernon, 1834 Kalorama Road, Washington, D. C. 1904.
- Bales, Dr. B. R., 151 West Main St., Circleville, Ohio. 1906.
- Bangs, Outram, Museum of Comparative Zoology, Cambridge, Mass. 1910.
- Barbour, Rev. Robert, Y. M. C. A., Montclair, N. J. 1911.
- Barker, Fred, Parkers Prairie, Minn. 1914.
- Barnes, Claude T., 359 10th Ave., Salt Lake City, Utah. 1915.
- Barnes, R. Magoon, Lacon, Ill. 1908.
- Barrows, Albert L., 1430 Arch St., Berkeley. 1912.
- Barrows, Prof. Walter B., Box 183, East Lansing, Mich. 1909.
- Batchelder, Chas. F., 7 Kirkland St., Cambridge, Mass. 1910.
- Baynard, Oscar E., Clearwater, Fla. 1911.
- Beck, Rollo H., R. D. 21, San Jose. 1894.
- Bell, W. B., Agricultural College, N. D. 1912.
- Bennett, R. H., Room 409, 444 Market St., San Francisco. 1909.
- Bent, A. C., Taunton, Mass. 1909. ———
- Bicknell, Mrs. F. T., 319 S. Normandie Ave., Los Angeles. 1913.
- Bigelow, Homer L., Old Orchard Road, Chestnut Hill, Mass. 1910.
- Bishop, Dr. Louis B., 356 Orange St., New Haven, Conn. 1904.
- Blain, Merrill W., 1026 N. Coronado St., Los Angeles. 1909.
- Blayney, Nita A., 920 O St., Fresno. 1911.
- Bliss, J. G., 2148 B, Clinton Ave., Alameda. 1908.
- Boeing, W. E., 1100 Hoge Bldg., Seattle, Wash. 1914.
- Bohlman, Herman T., 202 Occident St., Portland, Oregon. 1903.
- Bolander, L. P., 2517 21st Ave., Oakland. 1907.
- Bowdish, B. S., Demarest, N. J. 1910.
- Bowditch, Charlotte, 2227 Upper Garden St., Santa Barbara. 1914.
- Bowles, J. H., The Woodstock, Tacoma, Wash. 1903.
- Boyer, Thos., Continental National Bank, Salt Lake City, Utah. 1915.
- *Bradbury, W. C., 1440 Race St., Denver, Colo. 1913.
- Braislin, Wm. C., M. D., 556 Washington Ave., Brooklyn, N. Y. 1910.
- Brandt, H. W., 2025 E. 88th St., Cleveland, Ohio. 1914.
- Brant, C. A., El Tovar, Grand Canyon, Arizona. 1914.
- Brewster, William, 145 Brattle St., Cambridge, Mass. 1904.
- Brooks, Allan, Okanagan Landing, B. C., Canada. 1906.
- Brooks, L., Box 338, New Bedford, Mass. 1913.
- Brown, D. E., Room 11, Federal Bldg., Tacoma, Wash. 1909.
- Brown, Edward J., 1733 Fourth Ave., Los Angeles. 1915.
- Brown, Mrs. Herbert, 233 N. Court St., Tucson, Arizona. 1914.
- Brown, Ronald K., 320 Broadway, New York, N. Y. 1914.
- Brown, Wm. J., 250 Oliver Ave., Westmount, Quebec, Canada. 1911.
- Browns, W. W., Jr., 543 E. Ocean Ave., Long Beach. 1909.
- Bryant, Mrs. Amy M., 2533 Hill Court, Berkeley. 1914.
- Bryant, Harold C., Museum of Vertebrate Zoology, University of California, Berkeley. 1910.
- Buckland, Hon. James, Royal Colonial Inst., Northumberland Ave., London, England. 1912.

- Burnett, W. L., Box 691, Fort Collins, Colo. 1910.
- Burnham, Dr. Clark, Bushnell Place, Berkeley. 1907.
- Burnham, Mrs. Clark, Bushnell Place, Berkeley. 1907.
- Burns, Frank L., Berwyn, Pa. 1909.
- Burtch, Verdi, Branchport, N. Y. 1910.
- Butler, Mrs. Edward Gay, Annefield, Berryville, Clarke Co., Va. 1914.
- Buturlin, Sergius A., Wesenberg, Esthonia, Russia. 1909.
- Caduc, Eugene E., 512 Massachusetts Ave., Boston, Mass. 1911.
- Cameron, E. S., Marsh, Montana. 1914.
- Camp, Charles L., 2334 Durant Ave., Berkeley. 1909.
- Cantwell, George G., Puyallup, Washington. 1915.
- Carpenter, Nelson K., Box 127, Escondido. 1901.
- Carriger, Henry W., 5185 Trask Ave., Oakland. 1895.
- Carriker, M. A., Cincinnati Coffee Co., Santa Marta, Colombia, South America. 1911.
- Case, Rev. B. F., Tolland, Conn. 1913.
- Case, C. M., 7 Holcomb St., Hartford, Conn. 1911.
- Chamberlain, C. W., 36 Lincoln St., Boston, Mass. 1912.
- Chamberlain, W. J., 429 N. 12th St., Corvallis, Oregon. 1907.
- Chambers, Fred W., 701 Walker Bank Bldg., Salt Lake City, Utah. 1915.
- Chambers, W. Lee, Eagle Rock. 1897.
- Chapman, Frank M., American Museum of Natural History, New York, N. Y. 1903.
- Cheesman, M. R., R. D. 3, Box 61, Murry, Utah. 1915.
- *Childs, John Lewis, Floral Park, N. Y. 1904.
- Clark, Josiah H., 238 Broadway, Paterson, N. J. 1910.
- Clay, C. Irvin, Box 353, Eureka. 1910.
- Clifton, H. T., 509 E. Walnut St., Pasadena. 1904.
- Coale, Henry K., Highland Park, Ill. 1907.
- Coffin, Sherwood, 35 Second St., San Francisco. 1911.
- Coggins, Herbert L., 2929 Piedmont Ave., Berkeley. 1910.
- Cohen, Donald A., Alameda. 1894.
- Colburn, A. E., 806 S. Broadway, Los Angeles. 1905.
- Commons, Mrs. Marie A., 608 Chamber of Commerce, Minneapolis, Minn. 1914.
- Conger, Dorothy, 2425 Oregon St., Berkeley, 1914.
- Cooke, Wells W., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1911.
- Cookman, Alfred, Moneta. 1912.
- Coombs, Edward S., 243 Franklin St., Boston, Mass. 1915.
- Cooper, James S., 827 54th St., Oakland. 1903.
- Crane, Ada Ethel, 19 Ross St., San Rafael. 1914.
- Craven, Jesse T., 811 Roosevelt Ave., Detroit, Mich. 1909.
- Crosby, Maunsell S., Grasmere Farms, Rhinebeck, N. Y. 1911.
- Culp, Charles H., Pacific Grove. 1914.
- Culver, Susan B., 2908 Channing Way, Berkeley. 1914.
- Currier, Ed. S., P. O. Drawer 21, St. Johns, Multnomah Co., Oregon. 1904.
- Daggett, Frank S., 2833 Menlo Ave., Los Angeles. 1895.
- Darlington, E. J., 2301 Monroe St., Wilmington, Delaware. 1911.
- Davenport, Mrs. Elizabeth B., Northern Ave., Brattleboro, Vermont. 1911.
- Davidson, Cassie A., 1523 Spring St., Berkeley. 1915.
- Davis, Evan, 339 E. Palmyra Ave., Orange. 1894.
- Davis, J. M., 811 O St., Eureka. 1908.
- Dawson, W. Leon, R. D. 3, Box 83, Santa Barbara. 1906.
- Day, Chester S., 15 Chilton Road, West Roxbury, Mass. 1910.
- Dean, W. F., Three Rivers. 1901.
- Deane, Ruthven, 112 W. Adams St., Chicago, Ill. 1904.
- Deane, Walter, 29 Brewster St., Cambridge, Mass. 1907.
- Dear, Lionel S., Box 456, Fort William, Ontario, Canada. 1914.
- Dearborn, Ned, Linden, Maryland. 1909.
- Decker, F. R., Box 201, Prosser, Washington. 1913.
- Dial, Dr. E. A., 1837 N. Wilton Place, Los Angeles. 1913.
- Dice, Lee R., Museum of Vertebrate Zoology, University of California, Berkeley. 1914.
- Dickey, Donald R., Box 701, Pasadena. 1910.
- Dickey, Samuel S., 31 S. West St., Waynesburg, Pa. 1911.
- Dille, F. M., 2927 W. 28th Ave., Denver, Colo. 1903.
- Dixon, Joseph, Escondido. 1904.
- Dolbear, Katherine E., Berkeley Inn, Berkeley. 1915.
- Douglas, J. S., Bin 7, Bakersfield. 1911.
- DuBois, Alexander Dawes, Dutton, Montana. 1911.
- Dunbar, W. Linfred, care of Remington Arms Co., Bridgeport, Conn. 1911.
- Duprey, H. F., Dixon. 1907.
- Durfee, Owen, Box 125, Fall River, Mass. 1911.

- Dutcher, Wm., 990 Central Ave., Plainfield, N. J. 1905.
- Dutton, P. C., 26 Litchfield Road, Stone Staffs, England. 1913.
- Dwight, Dr. Jonathan, Jr., 134 W. 71st St., New York, N. Y. 1904.
- Earle, Eleanor P., Palma Sola, Manatee Co., Florida. 1911.
- Eastgate, Alf., Tohia, N. D. 1913.
- Eastman, Lieut. F. B., Plattsburg Barracks, New York. 1904.
- Edson, J. M., Marietta Road, Bellingham, Wash. 1911.
- Edwards, H. Arden, R. D. 1, Box 254, Los Angeles. 1913.
- Eggleston, J. W., Occidental College, Los Angeles. 1913.
- Emmons, R. A., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1914.
- Esterly, C. O., Occidental College, Los Angeles. 1908.
- Everett, E. E., Ventura. 1913.
- Evermann, Barton W., California Academy of Sciences, San Francisco. 1911.
- Fargo, Mrs. Minerva J., 1632 N. Kingsley Drive, Los Angeles. 1914.
- Fawcett, F. H., Narrows, Harney Co., Oregon. 1912.
- Ferguson, Mrs. Mary Van E., 5 Panoramic Way, Berkeley. 1915.
- Finley, Wm. L., 651 E. Madison St., Portland, Oregon. 1900.
- Fischer, E. J., 525 W. 57th St., Los Angeles. 1910.
- Fisher, Dr. A. K., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1904.
- Fisher, Elizabeth W., 2222 Spruce St., Philadelphia, Pa. 1910.
- Fisher, Walter K., 1525 Waverly St., Palo Alto. 1900.
- Fitzpatrick, T. J., Bethany, Nebraska. 1913.
- Flanagan, John H., 153 Power St., Providence, R. I. 1904.
- Fleming, J. H., 267 Rusholme Road, Toronto, Ontario, Canada. 1910.
- Flint, Wm. R., 160 S. Madison Ave., Pasadena. 1912.
- Ford, W. A., Umatilla, Oregon. 1915.
- Forrest, E. R., 357 N. Main St., Washington, Pa. 1910.
- Fortner, J. C., Brawley. 1910.
- Fowler, Frederick H., 221 Kingsley Ave., Palo Alto. 1901.
- Fox, Mrs. L. L., Los Olivos, Santa Barbara Co. 1911.
- Frazier, J. F., Independence, Mo. 1911.
- Fuertes, Louis A., Cornell Heights, Ithaca, N. Y. 1904.
- Gage, Mabel C., Worcester, Mass. 1913.
- Gane, Henry S., Santa Barbara. 1903.
- Gardner, Leon L., Claremont. 1911.
- Gault, Benj. T., Glen Ellyn, Ill. 1905.
- Gay, Harold S., 200 S. Wilson Ave., Alhambra. 1901.
- Gay, Melvin R., 1495 W. Adams St., Los Angeles. 1914.
- Germain, Clare, 3906 W. First St., Los Angeles. 1915.
- Gillette, Thurlow T., 982 Worcester St., Pasadena. 1915.
- Gilman, M. French, Sacaton, Arizona. 1901.
- Goelitz, Walter A., 1622 Judson Ave., Ravinia, Ill. 1915.
- Goethe, C. M., 2615 K St., Sacramento. 1915.
- Goldman, E. A., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1901.
- Goldman, Luther J., 2418 Prince St., Berkeley. 1902.
- Goodcell, Mrs. Marion L., 864 D St., San Bernardino. 1914.
- Goodwin, Rev. S. H., Box 284, Provo, Utah. 1910.
- Gould, Jos. E., 5 Clifton St., Norfolk, Va. 1909.
- Grant, U. S., 4th, 43 Westmorley Court, Cambridge, Mass. 1909.
- Granville, Fred, 424 North Rosemont Ave., Los Angeles. 1911.
- Grey, Henry, R. D. 2, Box 154 A, San Diego. 1901.
- Grinnell, George Bird, 238 E. 15th St., New York, N. Y. 1914.
- Grinnell, Mrs. Hilda Wood, 2543 Durant Ave., Berkeley. 1912.
- Grinnell, Joseph, Museum of Vertebrate Zoology, University of California, Berkeley. 1894.
- Guion, Geo. Seth, Napoleonville, La. 1911.
- Gunn, Amy E., Mill Valley. 1914.
- Halladay, Daniel S., 1609 N. Main St., Santa Ana. 1910.
- Hanford, Forrest, Y. M. C. A. Bldg., Oakland. 1912.
- Hann, H. H., Parkdale, Oregon. 1909.
- Hanna, Wilson C., 1000 Pennsylvania Ave., Colton.
- Haring, Mrs. C. M., 2801 Russell St., Berkeley. 1915.
- Harmon, Mrs. Frances M., 2115 Estrella Ave., Los Angeles. 1912.
- Harris, Harry, Cashier, Post Office, Kansas City, Mo. 1914.
- Hathaway, Harry S., Box 1466, Providence, R. I. 1912.
- Hazard, R. G., Peace Dale, R. I. 1909.
- Head, Miss Anna, 2730 Belrose Ave., Berkeley. 1912.

- Hegner, Carl D., 810 Avaco St., Los Angeles. 1914.
- Heinemann, Oluf J., 1664 Grove St., San Francisco. 1908.
- Heller, Edmund, U. S. National Museum, Washington, D. C. 1894.
- Helme, Arthur H., Miller Place, Suffolk Co., N. Y. 1911.
- Henderson, Junius, Box 398, Boulder, Colo. 1909.
- Henshaw, Judge F. W., Wells Fargo Bldg., San Francisco. 1915.
- Henshaw, H. W., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1909.
- Hersey, F. Seymour, 6 Maple Ave., Taunton, Mass. 1915.
- Hersey, L. J., Wray, Colo. 1909.
- Hodge, C. F., University of Oregon, Eugene, Oregon. 1914.
- Holland, Harold M., Box 1851, Los Angeles. 1901.
- Holman, F. C., 558 Lincoln Ave., Palo Alto. 1914.
- Hoover, Theodore J., 1 London Wall, London, E. C., England. 1898.
- Horsfall, R. Bruce, 1457 E. 18th St., Portland, Oregon. 1914.
- Howard, O. W., Box 484, Los Angeles. 1895.
- *Howell, Alfred B., Covina. 1908.
- Howell, B. F., Jr., 6 North West College, Princeton, N. J. 1909.
- Howes, Paul G., Stamford, Conn. 1910.
- Howsley, L. B., Culver, Oregon. 1909.
- Hubbard, Samuel, Jr., 244 Montecito Ave., Oakland. 1912.
- Hubbs, Carl L., Stanford University. 1910.
- Huber, Wharton, Gwynedd Valley, Pa. 1915.
- Huey, Lawrence, 32nd St. & Clay Ave., San Diego. 1909.
- Hunt, E. B., 4318 14th St., N. W., Washington, D. C. 1914.
- Hunter, J. S., Union Hotel, San Mateo. 1903.
- Husher, Mrs. Gertrude H., 1495 W. Adams St., Los Angeles. 1913.
- Illingsworth, J. F., College of Hawaii, Honolulu, H. T. 1896.
- Ingersoll, A. M., 908 F St., San Diego. 1895.
- Irving, F. N., care of Southern Express Co., Columbia, S. C. 1910.
- Isham, C. Bradley, 27 W. 67th St., New York, N. Y. 1909.
- Jackson, Thos. H., 304 N. Franklin St., West Chester, Pa. 1911.
- Jacobs, J. Warren, 404 S. Washington St., Waynesburg, Pa. 1909.
- Jay, Alphonse, 1622 Pennsylvania Ave., Los Angeles. 1901.
- Jay, Antonin, 1622 Pennsylvania Ave., Los Angeles. 1901.
- Jenkins, Ida G., 30 Dearborn St., Roxbury, Mass. 1914.
- Jessee, Dr. R. L., Philo, Ill. 1909.
- Jewett, R. D., 1238 S. Serrano St., Los Angeles. 1912.
- Jewett, Stanley G., 582 Bidwell Ave., Portland, Oregon. 1909.
- Job, Herbert K., 291 Main St., West Haven, Conn. 1915.
- Johnson, Frank E., 16 Amackassin Terrace, Yonkers, N. Y. 1911.
- Johnson, John C., Room 421, Y. M. C. A., Berkeley. 1914.
- Johnson, Myrtle E., National City. 1908.
- Jonas, Coloman, 1023 Broadway, Denver, Colo. 1910.
- Jones, Prof. Lynds, Museum of Oberlin College, Oberlin, Ohio. 1911.
- Jordan, A. H. B., Everett, Washington. 1911.
- Jordan, Dr. David Starr, Stanford University. 1902.
- Judson, W. B., 826 Washington Bldg., Los Angeles. 1894.
- Julien, Lillian M., Yreka, Siskiyou Co. 1901.
- Kaeding, Geo. L., Battle Mountain, Nevada. 1903.
- Kellogg, Louise, Box 371, Suisun. 1911.
- Kellogg, Prof. Vernon L., Stanford University. 1901.
- Kendall, J. N., Botany Bldg., University of California, Berkeley. 1915.
- Kennard, Frederic H., Dudley Road, Newton Centre, Mass. 1911.
- Kennedy, C. H., 549 Cowper St., Palo Alto. 1912.
- Kermode, F., Provincial Museum, Victoria, British Columbia, Canada. 1911.
- Kessing, Lawrence R., 1430 Santa Clara Ave., Alameda. 1899.
- Keyes, Prof. Chas. R., Mt. Vernon, Iowa. 1900.
- Kimball, H. H., Seal Beach. 1909.
- King, Harold L., Gardena. 1915.
- King, Hazel, 1898 Broadway, San Francisco. 1914.
- Kittredge, Joseph, Jr., U. S. Forest Service, Missoula, Montana. 1915.
- Knickerbocker, Chas. K., 445 Sacramento Ave., Carpenter Station, Chicago. 1905.
- Knowlton, Dr. F. H., U. S. National Museum, Washington, D. C. 1910.
- Kofoid, Prof. C. A., 2616 Etna St., Berkeley. 1909.
- Kohler, Louis S., 98 Watsessing Ave., Bloomfield, N. J. 1909.
- Kretzman, Prof. P. E., 1230 St. Anthony Ave., Concordia College, St. Paul, Minn. 1914.
- Kuser, John D., Bernardsville, N. J. 1912.
- Labarthe, Jules, Thompson, Nevada. 1914.

- Lamb, Chester C., 549 W. 43rd Place, Los Angeles. 1899.
- Lancashire, Mrs. J. H., Manchester, Mass. 1911.
- Lane, Geo. W., Morgan Hill. 1914.
- Lastreto, C. B., 260 California St., San Francisco. 1913.
- Law, J. Eugene, Hollywood. 1900.
- Layne, J. Gregg, 232 S. Spring St., Los Angeles. 1912.
- LeBris, Louise, 2569 Clay St., San Francisco. 1914.
- Leland, H. J., Court House, Los Angeles. 1897.
- Letchworth, Pierre E., Covina. 1912.
- Lewis, L. Alva, 809 Yeon Bldg., Portland, Oregon. 1912.
- Libby, Gretchen L., 1331 Santa Barbara St., Santa Barbara. 1911.
- Ligon, J. Stokley, Chloride, New Mexico. 1914.
- Lindsay, D. Moore, 808 Boston Bldg., Salt Lake City, Utah. 1915.
- Lings, G. H., 208 Piermont Ave., Nyack, N. Y. 1913.
- Linton, C. B., 125 W. Ocean Ave., Long Beach. 1906.
- Litsey, John B., 1722 Alston Ave., Fort Worth, Texas. 1911.
- Little, Etta V., 413 E. Hadley St., Whittier. 1914.
- Little, Luther, 1625 W. Adams St., Los Angeles. 1914.
- Littlejohn, Chase, Redwood City. 1901.
- Loomis, Leverett M., California Academy of Sciences, San Francisco. 1902.
- Lord, Frank H., 726 Schrader St., San Francisco. 1914.
- Loring, J. Alden, Owego, Troga Co., N. Y. 1914.
- Love, Chas. A., 3353 22nd St., San Francisco. 1901.
- Love, Guy, R. D. 5, Oberlin, Kansas. 1913.
- Lueddemann, Frieda, R. D. 29, Los Gatos. 1914.
- Luther, Clarence H., 8 McIlroy Bldg., Fayetteville, Ark. 1909.
- MacDonald, James A., Lathrop. 1914.
- MacKay, Minnette, 670 King St., Santa Rosa. 1914.
- Magee, William A., R. D., Box 433, Fruitvale, Oakland. 1912.
- Mailliard, Ernest C., 1815 Vallejo St., San Francisco. 1909.
- Mailliard, John W., 300 Front St., San Francisco. 1894.
- Mailliard, Joseph, 1815 Vallejo St., San Francisco. 1895.
- Marshall, Dr. Benj. M., 2036 D St., Eureka. 1913.
- Martin, John W., 339 N. First St., San Jose. 1907.
- Martin, Luke B., Clearwater, Florida. 1914.
- Massey, Herbert, Ivy Lea, Burnage, Didsbury, Manchester, England. 1909.
- Mattern, Edwin S., 1042 Walnut St., Allentown, Pa. 1914.
- McAtee, W. L., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1907.
- McGregor, R. C., Bureau of Science, Manila, P. I. 1893.
- McLain, R. B., Market and 12th St., Wheeling, W. Va. 1897.
- Mearns, Lieut. Col. Edgar A., U. S. National Museum, Washington, D. C. 1905.
- Meeker, Jesse C. A., 51 Washington Ave., Danbury, Conn. 1907.
- Meister, H. D., Wauseon, Ohio. 1909.
- Merrill, E. W., Sitka, Alaska. 1912.
- Mershon, W. B., Saginaw, Michigan. 1911.
- Meyer, Heloise, Overlee, Lenox, Mass. 1914.
- Miller, Mrs. E. C. T., 3738 Euclid Ave., Cleveland, Ohio. 1914.
- Miller, Loye Holmes, State Normal School, Los Angeles. 1905.
- Miller, Mrs. Olive Thorne, 5928 Hayes Ave., Los Angeles. 1911.
- Miller, W. DeWitt, American Museum of Natural History, New York, N. Y. 1909.
- Mills, Enos A., Longs Peak, Estes Park, Colo. 1914.
- Mills, Dr. Herbert R., State Board of Health, Tampa, Florida. 1914.
- Miner, Dr. H. N., Colfax, Placer Co. 1903.
- Mitchell, H. H., 2337 Smith St., Regina, Saskatchewan, Canada. 1915.
- Mitchell, Dr. Walton I., 603 Beacon Bldg., Wichita, Kansas. 1909.
- Moore, Chas. S., Box 222, San Diego. 1913.
- Moore, Robert T., 46 Mansion Ave., Haddonfield, N. J. 1911.
- Moran, R. B., 2221 Ward St., Berkeley. 1897.
- Morcom, G. Frean, Box 175, Huntington Beach. 1904.
- More, R. L., Vernon, Texas. 1911.
- Muller, Carl, Marysville. 1911.
- Munk, Dr. J. A., 747 Alvarado St., Los Angeles. 1909.
- Munro, J. A., Okanagan Landing, British Columbia, Canada. 1914.
- Murie, O. J., 219 7th Ave., S., Moorhead, Minn. 1913.
- Myers, Mrs. H. W., 306 Ave. 66, Los Angeles. 1912.
- Nelson, E. W., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1904.
- Nevin, W. H., Pasadena. 1915.
- Nichols, J. T., American Museum of Natural History, New York, N. Y. 1909.

- Nicholson, Donald J., Orlando, Florida. 1911.
 Noack, H. R., 309 Perry St., Oakland. 1901.
 Nokes, Irwin D., 820 Marsh-Strong Bldg., Los Angeles. 1914.
 Norris, Joseph P., Jr., 2122 Pine St., Philadelphia, Pa. 1911.
 Norris, Roy, 725 N. 10th St., Richmond, Indiana. 1911.
 Oberholser, Harry C., 1444 Fairmont St., Washington, D. C. 1904.
 Ohl, H. C., 76 Third St., San Francisco. 1913.
 Ohlendorf, Dr. W. C., 1922 Blue Island Ave., Chicago, Ill. 1910.
 Osgood, Wilfred H., Field Museum of Natural History, Chicago, Ill. 1893.
 Osterhaut, George E., Windsor, Colo. 1915.
 Overington, R. Bruce, Laurel, Maryland. 1915.
 Owen, Virgil W., 1241 Vine St., Hollywood. 1896.
 Palmer, Elizabeth Day, 1741 Harvard Blvd., Los Angeles. 1909.
 Palmer, R. H., Pocatello, Idaho. 1915.
 Palmer, Dr. T. S., 1939 Biltmore St., N. W., Washington, D. C. 1903.
 Parker, Edwin S., 356 Broadway, Santa Cruz. 1913.
 Parker, Herbert, South Lancaster, Mass. 1911.
 Paul, J. H., 1320 E. Second, South, Salt Lake City, Utah. 1915.
 Paul, Lucius H., 19 Aurora St., Rochester, N. Y. 1911.
 Peabody, Rev. P. B., Blue Rapids, Kansas. 1904.
 Pearson, T. Gilbert, 2257 Loving Place, New York, N. Y. 1910.
 Peck, Morton E., 244 N. 12th St., Salem, Oregon. 1909.
 Pemberton, J. R., 71 Clarendon Ave., San Francisco. 1900.
 Peyton, Lawrence, Sespe, Ventura Co. 1909.
 Peyton, Sidney B., Sespe, Ventura Co. 1913.
 Phelps, Frank M., 212 Fourth St., Elyria, Ohio. 1912.
 Philipp, Philip Bernard, 220 Broadway, New York, N. Y. 1911.
 Phillips, Charles L., 5 W. Weir St., Taunton, Mass. 1915.
 Phillips, Don C., 49 N. Main St., Napa. 1912.
 Phillips, John C., Knobfields, Wenham, Mass. 1911.
 Pierce, Wright M., Box 116, Claremont. 1902.
 Pierpont, Philip, Nordhoff. 1913.
 Pilsbury, Frank O., 90 Main St., Walpole, Mass. 1911.
 Pleasants, Mrs. J. E., R. D. 3, Orange. 1900.
 Polkinghorn, George, 2651 Kenwood Ave., Los Angeles. 1915.
 Pope, E. F., Colmesneil, Texas. 1913.
 Powell, Helen, 2703 Dwight Way, Berkeley. 1914.
 Price, A. E., Grant Park, Ill. 1905.
 Radir, Paul L., 335 W. 27th St., Los Angeles. 1913.
 Randolph, Flora A., 2962 Derby St., Berkeley. 1907.
 Rankin, Edward P., care of U. S. S. Albattross, Sausalito. 1913.
 Rathbun, S. F., 217 14th Ave., N., Seattle, Washington. 1904.
 Ray, Milton S., 220 Market St., San Francisco. 1899.
 Redington, A. P., Box 66, Santa Barbara. 1897.
 Renick, Frank H., 1424 Belmont Ave., Seattle, Washington. 1912.
 Reynolds, L. R., care of Railroad Commission, 833 Market St., San Francisco. 1913.
 Rich, Guy C., M. D., 1820 El Cerrito Place, Hollywood. 1911.
 Richards, E. B., 412 Kate Hayes St., Box 805, Grass Valley, Nevada Co. 1909.
 Richards, Harriet E., 36 Longwood Ave., Brooklyn, Mass. 1914.
 Richards, Dr. T. W., care of Bureau of Medicine and Surgery, Navy Dept., Washington, D. C. 1908.
 Richey, J. Howard, 261 W. Dakota St., Pasadena. 1914.
 Richmond, Dr. Chas. W., U. S. National Museum, Washington, D. C. 1904.
 Richmond, W. L., Batavia, N. Y. 1915.
 Riley, J. H., U. S. National Museum, Washington, D. C. 1909.
 Ritter, Prof. W. E., La Jolla, San Diego Co. 1901.
 Roberts, Dr. T. S., 1603 4th Ave., Minneapolis, Minn. 1909.
 Robertson, Howard, City Attorney's Office, Hosfield Bldg., Los Angeles. 1896.
 Robertson, John McB., care of Jorgensen Contract, Waysahu, Oahu, H. T. 1913.
 Rogers, E. H., 2607 Hearst Ave., Berkeley. 1914.
 Rossignol, Gilbert R., 2116 Bull St., Savannah, Ga. 1909.
 Rowley, John, 42 Plaza Drive, Berkeley. 1909.
 Rust, Henry J., Box 683, Coeur d'Alene, Idaho. 1911.
 Sage, John H., Portland, Conn. 1910.
 Sampson, Walter B., 814 Kohl Bldg., San Francisco. 1894.
 Sands, E. V., Tombstone, Ariz. 1914.
 Sanford, Dr. Leonard C., 347 Temple St., New Haven, Conn. 1915.
 Sanford, W. H., 17 W. Magnolia St., Stockton. 1915.
 Saunders, Aretas A., Box 65, West Haven, Conn. 1909.

- Saunders, W. E., London, Ontario, Canada. 1910.
- Schaeffle, Ernest, 734 Mills Bldg., San Francisco. 1914.
- Schlisinger, Mrs. Jane L., 1417 Filbert St., Oakland. 1915.
- Schneider, J. J., Box 363, Anaheim. 1899.
- Schumacher, Irwin C., 217 A, East Hall, University of California, Berkeley. 1915.
- Sclater, William Lutley, 10 Sloane Court, London, S. W., England. 1909.
- Scott, Ellen G., 315 S. Glendale Ave., Tropic. 1915.
- Shannon, Wm. Purdy, Room 803, 1170 Broadway, New York, N. Y. 1914.
- Sharp, Clarence S., Escondido. 1902.
- Sharples, Robert P., West Chester, Pa. 1911.
- Shaw, W. T., 600 Linden Ave., Pullman, Washington. 1911.
- Sheafer, Dr. John G., 801 Ferguson Bldg., Los Angeles. 1914.
- Shelton, Alfred, University of Oregon, Eugene, Oregon. 1909.
- Shepardson, D. I., 209 E. 37th St., Los Angeles. 1909.
- Sherman, Althea R., R. D. 2, McGregor, Iowa. 1911.
- Shiras, George, 3rd, Stoneleigh Court, Washington, D. C. 1914.
- Shufeldt, Dr. R. W., 3356 18th St., N. W., Washington, D. C. 1911.
- Silliman, O. P., Castroville. 1913.
- Simmons, D. I., R. D. 1, Box 83 B, Los Angeles. 1914.
- Simmons, George F., 622 First National Bldg., Houston, Texas. 1913.
- Skinner, E. H., 1350 S. Hope St., Los Angeles. 1900.
- Skinner, M. P., Yellowstone Park, Wyoming. 1915.
- Sleeth, Asa, 1025 Michigan Ave., Portland, Oregon. 1913.
- Sloanaker, Jos. L., Box 402, Palisades, Colo. 1910.
- Smith, Allyn G., 1711 Euclid Ave., Berkeley. 1909.
- Smith, Austin Paul, 742 Pennsylvania Ave., San Antonio, Texas. 1907.
- Smith, Clarence E., Woody, Kern Co. 1915.
- Smith, Prof. Frank, University of Illinois, Urbana, Ill. 1911.
- Smith, Franklin J., Box 98, Eureka. 1913.
- Smith, Horace G., 2918 Lafayette St., Denver, Colo. 1914.
- Smith, Wilfred, 1125 Fifth St., Santa Monica. 1911.
- Snyder, Gaylord K., 1321 Berkshire Ave., Los Angeles. 1910.
- Snyder, Prof. J. O., Box 775, Stanford University. 1900.
- Spaulding, E. S., 1408 Chapala St., Santa Barbara. 1910.
- Spielmann, Oscar P., 1440 Warner Ave., Chicago, Ill. 1909.
- Sprunger, H. C., Wickenburg, Arizona. 1915.
- Squires, Rev. W. A., 3852 23rd St., San Francisco. 1912.
- Stansell, Sidney S. S., Manly, Alberta, Canada. 1915.
- Stark, Dr. W., Auburn, Placer Co. 1915.
- Steinbeck, Wm., 1029 N. Hunter St., Stockton. 1897.
- Stephens, T. C., Morningside College, Sioux City, Iowa. 1914.
- Stevens, Dr. J. F., Box 546, Lincoln, Nebraska. 1911.
- Stivers, Dr. C. G., 502 Auditorium Bldg., Los Angeles. 1914.
- Stock, Chester, 492 Seventh St., San Francisco. 1912.
- Stoddard, H. L., Field Museum of Natural History, Chicago, Ill. 1914.
- Stone, D. D., R. D. 3, Oswego, N. Y. 1909.
- Stone, George E., 1725 Le Roy Ave., Berkeley. 1912.
- Storer, Mary S., 467 San Pablo Ave., Fresno. 1914.
- Storer, Tracy I., Museum of Vertebrate Zoology, University of California, Berkeley. 1910.
- Stover, Allan J., Corvallis, Oregon. 1914.
- Strong, Wm. A., 41 Grand Ave., San Jose. 1912.
- Stuart, George H., 3rd, N. W. corner Broad and Chestnut Streets, Philadelphia, Pa. 1913.
- Sugden, J. W., 55 South 8th West St., Salt Lake City, Utah. 1915.
- Suksdorf, P. J., Bingen, Wash. 1910.
- Sutherland, G. F., East Hall, University of California, Berkeley. 1915.
- Swales, Bradshaw H., Box 566, Santa Barbara. 1906.
- Swarth, Harry S., Museum of History, Science and Art, Exposition Park, Los Angeles. 1897.
- Sweeny, Joseph A., care of Forest Service, Laramie, Wyoming. 1912.
- Swezy, Olive, 2531 Ridge Road, Berkeley. 1914.
- Swift, J. N., Stockport, Ohio. 1915.
- Sykes, George F., 322 Agricultural Hall, Corvallis, Oregon. 1913.
- Tarbell, Olga S., 1 Cabrillo Place, Pasadena. 1906.
- Taverner, P. A., Zoological Division, Geological Survey, Ottawa, Canada. 1909.
- Taylor, E. F., Grass Valley, Nevada Co. 1910.
- Taylor, Loren E., Box 482, Reno, Nevada. 1897.

- Taylor, Walter P., Museum of Vertebrate Zoology, University of California, Berkeley. 1905.
- Telford, Harry, Klamath Falls, Oregon. 1912.
- Terrill, L. McL., 53 Stanley Ave., St. Lambert, Quebec, Canada. 1911.
- Test, Frederick C., 4620 Greenwood Ave., Chicago, Ill. 1914.
- Test, Louis A., Ames, Iowa. 1908.
- Tevis, L. K., Bakersfield. 1912.
- *Thayer, John E., Box 98, Lancaster, Mass. 1906.
- Thorner, Mrs. Harriet B., University of Arizona, Tucson, Arizona. 1914.
- Todd, W. E. Clyde, Carnegie Museum, Pittsburgh, Pa. 1909.
- Tope, L. A., Clearfield, Iowa. 1915.
- Treganza, A. O., 62 Hooper Bldg., Salt Lake City, Utah. 1907.
- Treganza, Mrs. A. O., 614 E. 6th St., Salt Lake City, Utah. 1915.
- Tremper, Lauren, 136 Dewey St., Philadelphia, Pa. 1911.
- Trenor, Thomas, 1501 Scott St., San Francisco. 1913.
- Trippe, Thomas M., Howardsville, Colo. 1911.
- Trowbridge, Chas. O., Box 42, Station A, Framingham Center, Mass. 1915.
- Trumbull, J. H., Plainville, Conn. 1911.
- Tyler, John G., 1114 Belmont Ave., Fresno. 1905.
- Tyler, Dr. Winsor M., 522 Massachusetts Ave., Lexington, Mass. 1914.
- Unglish, W. E., Box 233, Gilroy. 1910.
- Van Fleet, Clark C., Box 468, Santa Rosa. 1906.
- Van Rossem, Adriaan, R. D. 1, Box 74 A, Pasadena. 1909.
- Visher, Prof. Stephen S., Walker Museum, University of Chicago, Chicago, Ill. 1911.
- Wakely, Mrs. Katherine S., 810 S. Burling-ton Ave., Los Angeles. 1915.
- Walker, Alex., Hemlock, Tillamook Co., Oregon. 1911.
- Walker, Ernest P., Wrangell, Alaska. 1910.
- Walker, Dr. R. L., 355 Main Ave., Carnegie, Pa. 1914.
- Wall, Edward, Box 554, San Bernardino. 1913.
- Ward, F. H., 18 Grove Place, Rochester, N. Y. 1915.
- Warren, E. R., 20 W. Caramillo St., Colorado Springs, Colo. 1909.
- Wear, Winifred N., 253 Coast Ave., Fresno. 1909.
- Weber, H. B., Blackfoot, Idaho. 1910.
- Weber, J. A., Box 327, Palisades Park, N. J. 1915.
- Weed, Benj., Box 24, Berkeley. 1911.
- Welch, L. W., R. D. 2, Box 227 F, Long Beach. 1911.
- Wells, Gurnie, R. D. 1, Box 29, Oakley. 1911.
- Westerfeld, Dr. Otto, 240 Stockton St., San Francisco. 1915.
- Wetmore, Alex., Biological Survey, U. S. Dept. of Agriculture, Washington, D. C. 1909.
- Wheeler, Mrs. J. W., Tucson, Arizona. 1912.
- Wheeler, Roswell S., 296 Park View Terrace, Oakland. 1894.
- Wheelock, Mrs. H. B., 1040 Hinman Ave., Evanston, Ill. 1909.
- Whitcher, Chas. L., Los Olivos. 1911.
- White, Halstead G., Claremont. 1914.
- Widmann, Otto, 5105 Von Versen Ave., St. Louis, Mo. 1904.
- Wilder, H. E., Carlotta, Humboldt Co. 1909.
- Willard, B. G., 1619 Massachusetts Ave., Cambridge, Mass. 1910.
- Willard, F. C., Tombstone, Arizona. 1905.
- Willett, George, 2123 Court St., Los Angeles. 1905.
- Williams, Dr. Edward H., 609 Exchange Bldg., Los Angeles. 1914.
- Williams, Robert W., Office of Solicitor, Dept. of Agriculture, Washington, D. C. 1914.
- Wilson, Ada, 976 Atchison St., Pasadena. 1914.
- Wilson, J. Frank, 337 Highland Place, Monrovia. 1915.
- Wood, George, 7403 Hawthorne Ave., Hollywood. 1912.
- Wood, J. Claire, 179 17th St., Detroit, Michigan. 1909.
- Wood, Jesse J., 309 W. Micheltoreno St., Santa Barbara. 1912.
- Woodruff, Frank M., Academy of Sciences, Lincoln Park, Chicago, Ill. 1906.
- Worcester, Mrs. Alfred, Bacon St., Waltham, Mass. 1914.
- Wrathall, F. A., 315 S. W. Temple St., Salt Lake City, Utah. 1915.
- Wright, Frank S., 14 Cayuga St., Auburn, N. Y. 1910.
- Wright, Horace W., 107 Pinckney St., Boston, Mass. 1914.
- Wright, Howard W., Box 1, Stanford University. 1907.
- Wueste, Rudolph, Barrett Dam, Dulzura. 1901.
- Wyman, L. E., 4911 Budlong Ave., Los Angeles. 1908.
- Wythe, Margaret W., 4247 Terrace St., Oakland. 1912.
- Young, John P., 1510 Fifth Ave., Youngstown, Ohio. 1914.
- Zahn, Otto J., 2115 Estrella Ave., Los Angeles. 1896.

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Ornithology



Volume XVII

July-August, 1915

Number 4



COOPER ORNITHOLOGICAL CLUB

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVII

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Number 4



NESTING OF THE BOHEMIAN WAXWING IN NORTHERN BRITISH COLUMBIA

By ERNEST M. ANDERSON

WITH TWO PHOTOS BY THE AUTHOR

WHILE ON a general collecting trip in northern British Columbia during the summer of 1914, in the interests of the Provincial Museum, we rather unexpectedly discovered a breeding ground of the Bohemian Waxwing (*Bombycilla garrula*). Although a sharp look-out had been kept both by my companion, Mr. C. B. Garrett, and myself, throughout the month of June, no Waxwings were noted until the 7th of July, when an adult male was secured a short distance from "Hot Springs", situated on the east shore of Atlin Lake. Finding the specimen to be a male, I immediately hunted for its mate. A careful search was made for nearly two hours among the thickly growing spruce and pine trees, but in vain; it is quite probable that the bird shot had wandered some distance from its home, as no others were seen in the same section until well on in the fall.

Concluding that we were camped not far from the Waxwings' breeding grounds, we made an early start the following day in quest of their eggs. With the aid of a gasoline launch we were enabled to cover a wide extent of country, visiting many points on Atlin Lake, and some small isolated islands that otherwise would have been left unscanned. Our success on this occasion, therefore, was largely due to our adequate means of travel. After hunting all the forenoon without locating any Waxwings, we decided to renew our search farther down the lake during the afternoon.

Since no Waxwings had been noted near the lake shore or on adjacent islands, we headed our boat toward a group of small islands about a mile off-shore and varying from about three to ten acres in size. All were timbered with growth of stunted spruce, pine and aspen, with undergrowth consisting chiefly of thick willow bushes.

On approaching the first island to within a distance of about a hundred yards, we were welcomed, much to our delight, by several Waxwings flying from the shore. For the most part they flew directly towards the boat, then circled back to the island, apparently much alarmed at our presence. While on the wing the birds uttered a short succession of high-pitched, screaming notes, closely resembling in character, though not in volume, the cries heard on nearing a Pigeon Guillemot rookery on the seacoast. As soon as we landed most of the birds flew to an adjacent island. Only one pair remained, these being in full view about fifty yards distant, perched near the top of a small spruce tree. After a search of about fifteen minutes we found the nest, resting on two small horizontal branches, close to the trunk of a spruce tree, twelve

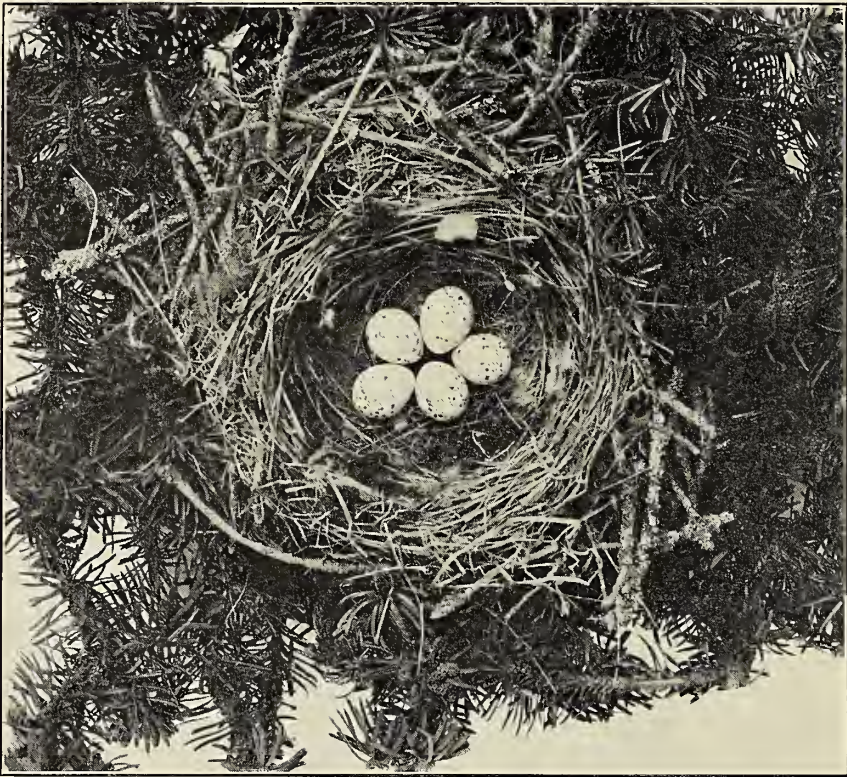


Fig. 50. NEST AND EGGS OF THE BOHEMIAN WAXWING, TAKEN AT ATLIN LAKE, BRITISH COLUMBIA. "NEST No. 2"; PLACED ON THE OUTER BRANCH OF A SPRUCE TREE.

feet from the ground. It contained two eggs. Both the nest and eggs being carefully packed, together with the birds, which we had shot, we continued to search the island for other nests. We failed to locate any, however, save an old Waxwing nest near the top of a small spruce tree, about fifteen feet up.

Anxious to visit the neighboring island, we gathered our spoils and proceeded to its nearby shore. Shortly after climbing up the rocky bluff, three pairs of Waxwings were located perched on tree tops. This island being of larger size than the first one visited, and being also more thickly timbered, a thorough and careful search was necessary to find their homes. By watching the birds' movements, and closely scanning every tree from top to bottom,

we were rewarded, after about an hour's search, with all three nests, each containing a complete set of perfectly fresh eggs. Still eager to learn if any more bred in the vicinity, several other islands of various sizes were visited, but no more of the birds were seen. While travelling back to camp, a single individual flew along the shore of Atlin Lake, but as it was growing late in the evening it was not deemed advisable to land and search for the nest.

It seems highly probable that if other sections had been traversed as carefully, additional nests of this species would have been found. Areas similar to those visited are to be found over practically the whole extent of Atlin Lake, which ranges north and south for almost one hundred miles, the width



Fig. 51. NEST AND EGGS OF THE BOHEMIAN WAXWING, TAKEN AT ATLIN LAKE, BRITISH COLUMBIA. "NEST No. 4", BUILT CLOSE TO TREE TRUNK.

varying from two to ten miles.

Unfortunately the photographs of the nests taken in the field were failures, the accompanying figures being from the specimens as they are at the Museum. These I hope will at least give a general idea of the appearance of the nest and eggs of the Bohemian Waxwing.

Following are detailed descriptions of the several nests and eggs. All were collected near Atlin, British Columbia, on July 8, 1914. Egg measurements are given in millimeters. The colors are according to Ridgway's *Color Standards and Nomenclature*.

Nest no. 1. The first nest found was saddled on two small horizontal

limbs of a spruce tree, the latter about twenty-five feet high, and with the trunk ten inches in diameter at the base. The nest was placed close to the trunk, at an elevation of twelve feet. It was composed outwardly of dried spruce and pine twigs, interwoven with dried grasses and cottonwood down. The lining consisted chiefly of finer grasses, with the inner walls scantily padded with dry bearded moss of a dark brownish color. The nest measures $7\frac{1}{2}$ inches in width, and $2\frac{1}{2}$ inches in depth, with a cavity of $3\frac{1}{4}$ inches across the top, and $1\frac{3}{4}$ inches deep. The eggs, two in number, are both of a pearl grayish ground color, with a few faint pale blue markings, and with conspicuous spots of various shapes, of bluish slaty black, intermixed with a few clay colored spots. The eggs measure: 24×17.3 and 24.2×17.5 .

Nest no. 2. This nest was well hidden on an outer branch of a spruce tree about eighteen feet above the ground. Of the four nests taken, this was the only one not placed against the tree trunk. It is similar to number one, both in size and structure. The eggs, five in number, were perfectly fresh. They are of the usual pearl grayish color, with small spots of bluish slaty black and of pale blue, with the clay colored spots almost lacking. The eggs measure: 22×17 , 22×17 , 22×17.3 , 22.5×17.2 , 22×17 . (See fig. 50.)

Nest no. 3. Situated in a small spruce tree, eighteen feet up, and placed against the tree trunk. Nest similar to number one, both in structure and measurements. The nest contained four fresh eggs of a pearl gray color, spotted with bluish slaty black, pale blue, and clay colored markings, mostly toward the larger end. The eggs measure: 24×17 , 23×17 , 23.5×17 , 23.3×17 .

Nest no. 4. This nest was situated close to the trunk of a small slender spruce tree, fifteen feet up. It is similar to number one, differing only in having a scant lining of white fur of the Northern Hare (*Lepus americanus macfarlandi*). The nest contained five fresh eggs, of a pearl grayish color, spotted and blotched with blue slate, and with obscure pale blue markings, mostly toward the larger end. This set is not marked as heavily as any of the others. The eggs measure: 24.5×17.3 , 25×17.3 , 24.5×17 , 25×17.5 , 25×17 . (See fig. 51.)

Victoria, British Columbia, Canada, April 20, 1915.

NOTES ON SOME BIRDS OF SPRING CANYON, COLORADO

By W. L. BURNETT

SPRING CANYON is a small opening in the first range of foothills seven miles southwest of Fort Collins. Viewing it from the standpoint of a mammalogist, this canyon has always been an interesting spot to me. While no systematic study of the birds found in this vicinity has been made by me, the following notes have been picked up from time to time. A half day or day now and then has been spent at the canyon, with the collection of small mammals the main object of the trips. Of such specimens we have taken some twenty species or subspecies, in the canyon proper and just outside. The place was named from a large spring that in years past flowed just at the entrance of the canyon, in early days a favorite camping spot for emigrants, as the old California trail ran nearby. Several years ago, a mighty flood rushed

down the canyon and destroyed the spring, so that it has not flowed since. The flood, to some extent, ruined the beauty of the canyon, for huge blocks of sand-stone were washed down from the side walls. One of these was moved about fifty yards, and weighed several tons. The canyon proper is about one-half mile through. The Auto Stage road to the famous Estes Park now runs through the canyon, which is the first bit of rugged scenery the eastern tourist sees after leaving Fort Collins.

These bird notes were taken in the canyon, and on the two quarter sections lying just outside on the plains. On both sides of the road, including the canyon, is the Dawley ranch, joined on the east by the Berry ranch. On the south side of the road is a pasture of native grass, with a small reservoir which is filled with flood water. In dry seasons this has little or no water in it, therefore water birds are scarce.

There is a small stream, known as Spring Creek, flowing through the canyon, taking a northeasterly course past the Berry house, which stands about three hundred yards outside. Along this stream, between the canyon and the Berry house, is a small growth of cotton-wood (*Populus angustifolia*) and willow (*Salix*, sp. ?), and underbrush of various kinds, including wild plum (*Prunus melanocarpa*), choke-cherry (*Prunus pennsylvanica*), mountain maple (*Acer glabrum*), wild goose-berry (*Ribes purpureum*), black currant (*Ribes floridum* ?), haws (*Crataegus occidentalis*), wild rose (*Rosa sayi*), etc.

On the walls of the canyon is found yellow pine (*Pinus scopulorum*) and cedar (*Sabina scopulorum*). As this is the only timber and underbrush to speak of between the Big Thompson river to the south, and the Cache La Poudre river to the north, it is a favorite spot for birds, especially so in migration. Along Spring Creek on the Dawley ranch is some back water and a small patch of swampy ground, but not enough to be of much attraction to the birds usually found at such places.

Through the courtesy of the Dawleys and Berrys, I have had the privilege of shooting, trapping, and building campfires on both places, and in a way making myself a general nuisance. Mr. Berry, while not an ornithologist, is a keen observer, and familiar with most of the common birds of the region, and he has been of assistance to me in locating nests, etc. The dates on spring migration, as given in this list of birds, are averages compiled from records kept for several years for me by Mr. Berry. The dates following the word "breeds" are those on which full sets of eggs have been found.

Rallus virginianus. Virginia Rail. Uncommon; breeds (May 30).

Oxyechus vociferus. Killdeer. Common in the canyon and out. Arrives March 10; breeds (June 2).

Zenaidura macroura carolinensis. Mourning Dove. Common. Arrives April 15; breeds (May 29). We have two winter records for this bird, January 15, 1901, and November 24, 1903.

Cathartes aura septentrionalis. Turkey Vulture. Not common; one taken in the spring of 1902.

Accipiter velox. Sharp-shinned Hawk. Not uncommon. One taken in the canyon April 13.

Buteo borealis calurus. Western Red-tail. Common in migration.

Falco columbarius columbarius. Pigeon Hawk. Not common. Two specimens taken on the Berry ranch, September 9 and 18.

Falco sparverius sparverius. Sparrow Hawk. Common; breeds (May 21). Arrives April 28.

Asio wilsonianus. Long-eared Owl. One or two seen almost every trip made to the canyon. No doubt breeds, but we have no record.

Cryptoglaux acadica acadica. Saw-whet Owl. Rare. One found dead in the road near the Berry house.

Coccyzus americanus occidentalis. California Cuckoo. Not uncommon, several specimens having been taken; breeds (June 16).

Coccyzus erythrophthalmus. Black-billed Cuckoo. Rare, but one specimen having been taken.

Melanerpes erythrocephalus. Red-headed Woodpecker. Common; arrives May 20. Breeds (June 19). Mr. Berry has a small cherry orchard on his place, and these woodpeckers keep him busy at cherry time, trying to get his share of the fruit.

Colaptes cafer collaris. Red-shafted Flicker. A common resident; breeds (May 13). We have in the college collection a Flicker skin taken at the canyon, that is a hybrid between *cafer* and *auratus*.

Aeronautes melanoleucus. White-throated Swift. Common, several have been taken in the canyon. No doubt they breed there, but we have no record.

Tyrannus tyrannus. Kingbird. Common. Arrives May 10; breeds (June 6).

Tyrannus verticalis. Arkansas Kingbird. Common; arrives May 8.

Sayornis sayus. Say Phoebe. Common. Arrives April 5; breeds (May 15). Mr. Berry had in his workshop a hawk, mounted with spreading wings. Through the open window of this shop, a pair of Phoebes entered and built a nest on the back of this mounted hawk, between the outspread wings.

Myiochanes richardsoni richardsoni. Western Wood Pewee. Common. Arrives May 16; breeds (June 26).

Pica pica hudsonia. Magpie. Common; breeds (May 6).

Cyanocitta stelleri diademata. Long-crested Jay. Common in winter, but uncommon in summer. Berry found a nest of this jay in a pine tree, high up on the north canyon wall.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Not uncommon. Arrives April 10; breeds (May 29).

Agelaius phoeniceus phoeniceus. Red-winged Blackbird. Common; breeds (May 15).

Sturnella neglecta. Western Meadowlark. Common; breeds (May 29).

Icterus bullocki. Bullock Oriole. Common. Arrives May 9; breeds (June 7).

Euphagus cyanocephalus. Brewer Blackbird. A common summer resident. We have no record of its breeding in the canyon.

Carpodacus mexicanus frontalis. House Finch. Common; breeds (May 5).

Leucosticte tephrocotis tephrocotis. Gray-crowned Rosy Finch. Not uncommon in winter. There are several specimens in the college museum taken at the canyon.

Melospiza lincolni. Lincoln Sparrow. Not uncommon. There is a mounted bird in the college museum taken at the canyon.

Pipilo maculatus montanus. Spurred Towhee. Common; arrives April 25. The walls of the canyon are covered with a thick growth of underbrush, a condition dear to the hearts of the towhees, and as they skulk through this underbrush, the canyon walls echo with their harsh call-notes.

Oreospiza chlorura. Green-tailed Towhee. One of the common birds of the canyon.

Zamelodia melanocephala. Black-headed Grosbeak. Common. Arrives May 8; breeds (June 20).

Calamospiza melanocorys. Lark Bunting. This is one of my favorite birds. A common summer resident, nesting in the alfalfa fields. Arrives May 20; breeds (June 6).

Piranga ludoviciana. Western Tanager. Not uncommon in migration. Arrives May 14.

Petrochelidon lunifrons lunifrons. Cliff Swallow. Common. Arrives May 13; breeds (June 25).

Hirundo erythrogastra. Barn Swallow. Common. Arrives May 9; breeds (July 22).

Stelgidopteryx serripennis. Rough-winged Swallow. Five or six pairs found nesting June 27 in the bank along Spring Creek.

Lanius ludovicianus excubitorides. White-rumped Shrike. Not uncommon. Arrives April 25; breeds (May 29).

Vireosylva gilva gilva. Eastern Warbling Vireo. One of the common birds among the cotton-woods.

Dendroica aestiva aestiva. Yellow Warbler. One of the common warblers. Arrives May 8; breeds (June 1).

Dendroica auduboni auduboni. Audubon Warbler. The commonest warbler during migration. Arrives April 17.

Seiurus noveboracensis notabilis. Grinnell Water-thrush. One specimen in the college museum, taken in the canyon.

Oporornis tolmiei. Macgillivray Warbler. One of the common warblers of the canyon. We have no record of its breeding.

Geothlypis trichas occidentalis. Western Yellow-throat. Abundant.

Icteria virens longicauda. Long-tailed Chat. Not uncommon. We have no data on its spring arrival. Berry found it nesting, but failed to record the date.

Wilsonia pusilla pileolata. Pileolated Warbler. Common in migration.

Setophaga ruticilla. Redstart. Not uncommon.

Mimus polyglottos leucopterus. Western Mockingbird. Not uncommon; arrives May 9. No doubt breeds, but we have no record of it.

Dumetella carolinensis. Catbird. Common. Arrives May 13; breeds (June 22).

Toxostoma rufum. Brown Thrasher. Common. Arrives May 13; breeds (June 19).

Salpinctes obsoletus obsoletus. Rock Wren. Common on the rocky walls of the canyon. A full set of eggs was taken from a hole in a sandstone ledge, June 7.

Hylocichla fuscescens salicicola. Willow Thrush. Rare. Only one record, a mounted specimen in the college museum, taken at the canyon in 1902.

Hylocichla ustulata swainsoni. Olive-backed Thrush. Common in migration.

Planesticus migratorius propinquus. Western Robin. Common. Arrives March 5; breeds (May 23).

Sialia currucoides. Mountain Bluebird. Arrives February 25; breeds (June 16).

Colorado Agricultural College, May 1, 1915.

WOODPECKERS OF THE ARIZONA LOWLANDS

By M. FRENCH GILMAN

WITH TEN PHOTOS BY THE AUTHOR

THE TERRITORY covered by these notes is a strip of country about three miles wide, on each side of the Gila River, extending from Blackwater at the east, to Casa Blanca and Snaketown on the west. Except for species peculiarly adapted to life on the desert, the country is anything but a woodpecker's paradise. Mesquite and ironwood, comprising the bulk of the timber, probably make hard pecking, and except along the river bottoms there is not much growth suitable for the birds. Of the eight species of woodpeckers to be mentioned, only two can be called abundant, but these two make up for the lack of numbers of the others.

The Cactus Woodpecker (*Dryobates scalaris cactophilus*) may be seen in limited numbers at all times of the year. It is seemingly at home in any location, in the open country working on the various species of cactus (*Opuntia*); in dense mesquite and screw-bean thickets; or in cottonwood and willow groves. The nest holes are made in any suitable tree or shrub, and average about 1.55 inches in diameter, with depth of six to eight inches. I have seen the nests in mesquite, screw-bean, ironwood, cottonwood, willow, palo verde, and cholla cactus (*Opuntia fulgida*). They may nest in the giant cactus also, but I have never found them there. The height of the nest varies from two feet to twenty or more, and the holes are excavated in dead or dying wood, though occasionally part of the hole may extend into green wood.

The Sierra Sapsucker (*Sphyrapicus varius daggetti* = *S. ruber ruber* of the A. O. U. *Check-List*) is a rare visitor to this locality, and I have seen only three. February 9, 1910, a female was secured, October 5, 1910, a male taken, and October 5, 1914, another one seen but not secured. All three were in cottonwood trees, where some of the characteristic drawn-work was seen.

The Red-naped Sapsucker (*Sphyrapicus varius nuchalis*) is a winter visitant along the Gila River, and while not to be called abundant, it is frequently noticed. I have seen individuals from October 6 to as late as April 17, and in all the months between these two dates. Once I saw three in one mesquite tree. Signs of their work are frequently present on cottonwood and willow trees and occasionally on an Arizona ash. If there are any almond trees in the country they are sure to be attacked, as they are favorites with these birds. Only once or twice have I seen mesquite trees attacked.

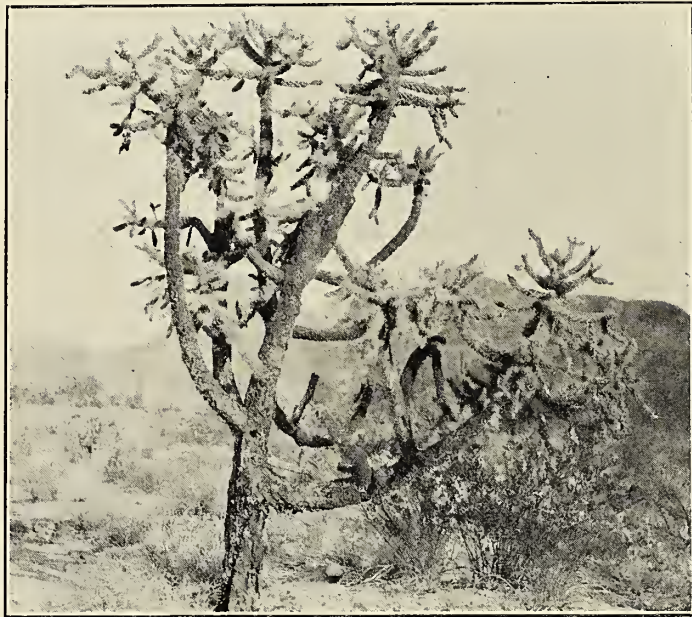


Fig. 52. NEST HOLE OF CACTUS WOODPECKER IN TRUNK OF CHOLLA CACTUS.

The Mearns or Ant-eating Woodpecker (*Melanerpes formicivorus aculeatus*) may be termed a rare visitor to the Pima Reservation as I have seen only three of them during a stay of seven and a half years. May 22, 1908, I saw one at Casa Blanca, a few miles west of Sacaton; September 5, 1910, I secured one at Sacaton, at work on a mesquite woodpile in a back yard; and December 7, 1914, I saw one at Santan, on the north side of the Gila River.

The Lewis Woodpecker (*Asyndesmus lewisi*) is another rare visitor, and I have noted only two during the time spent at Sacaton and Santan. One was seen a few miles from Sacaton on October 6, 1910; and one was secured at Sacaton November 13, 1910, while he was at work on fruit in a late pear tree.

Were it not for the Gila Woodpecker (*Centurus uropygialis*) what would become of the several species of birds that use already prepared cavities for their domiciles? In some cases these tenants do not even await the pleasure

of the excavators, but take forcible possession. In holes excavated by Gila Woodpeckers there may regularly be found nesting the Elf Owl, Ferruginous Pigmy Owl, Ash-throated Flycatcher, and Arizona Crested Flycatcher. Occasionally a Cactus Wren makes use of the handy hollow, and once I saw one occupied by the nest of a Lucy Warbler. A big "rough-neck" scaly lizard frequents the holes when not too high in the cactus, and in two holes in willow trees I found snakes. It is not pleasant to insert one's hand and have a big lizard or snake crawl up the arm to escape. Rats and mice are sometimes found in the deserted holes, especially if the tree be much decayed and with cracks and hollows connecting holes at different heights in the tree or branch. So these woodpeckers may be considered among the class of innocent or unintentional benefactors.

As a neighbor, the Gila Woodpecker is permanently on the map, and is afraid neither of being seen nor heard. He is much in the public ear with a variety of notes and calls. His sociable conversational notes somewhat resem-



Fig. 53. PIMA INDIAN CABIN, WITH STORE OF CORN ON THE ROOF. A TREASURE TROVE FOR THE GILA WOODPECKER.

ble those of the California Woodpecker but are shriller. In such of his notes as are directed at humanity there is a peevish complaining tone, especially if closely approached when feeding on fruit or some other delicacy. In such cases there is only one term that exactly describes his attitude and utterances, and that is the phrase "belly-aching". In fact all of his talk at us has a distinctly "colicky" tone and one feels like giving him something to whine about. His ordinary call slightly resembles that of the Flicker but is not quite so loud; altogether he is quite a conversationalist.

This woodpecker frequents houses and yards, and with slight encouragement comes regularly for food, not hesitating to call loudly for it if breakfast be much delayed. The Indians store corn in the ear on the flat tops of their houses and sheds (see fig. 53), and each home has one or more of woodpecker retainers or pensioners hanging about most of the time. This corn provides an abundant and sure source of food, and the birds make the most of it. I have never seen any indication of food-storage on the part of the Gila Wood-

pecker, as with the California Woodpecker, for they live in a claw-to-beak fashion. They peck at a kernel until it comes off the cob, when it is carried to a post or tree and placed firmly in a crack. Here it is pecked to pieces and eaten. They seem never to swallow the kernel whole but always break it up. They seem to be allotted on the ratio of a pair of birds to a home, and it is but rarely that more than two are seen at the same cornerib. During the breeding season they are shyer and are not seen around the homes very much; but when the young are grown they "bring them out" and present them as it were.

The food of this woodpecker is varied, nearly everything being grist that comes to his mill. He pecks around decayed and dying trees as well as green ones, and presumably get the insects usually found and eaten by such birds. The giant cactus is pecked into very frequently, and I believe some of the pulp is eaten. The small punctures made are not enlarged, and in some cases quite an area is bitten into. The fruit of the giant cactus is eaten as long as it lasts, and berries of the *Lycium* are also freely eaten. The Gila Woodpecker frequents corn fields, and pecks through the husks into the ears of corn. The

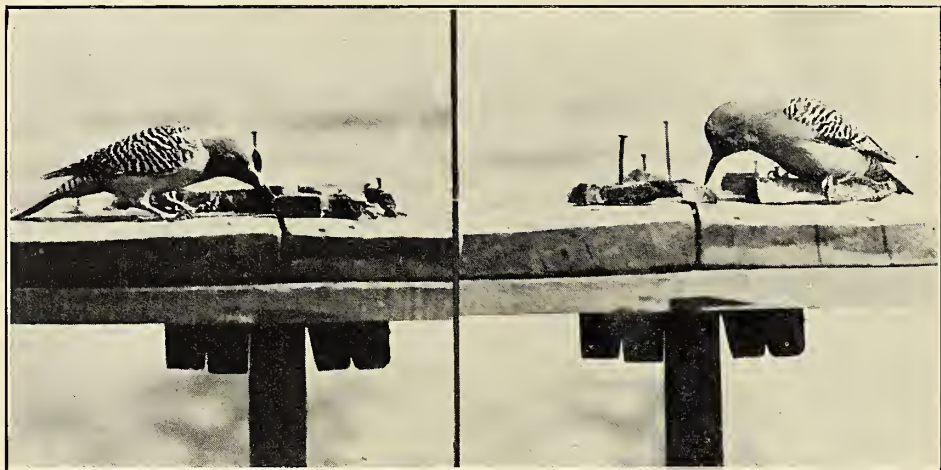


Fig. 54. ADULT GILA WOODPECKER AT WORK ON T-BONE STEAK.

birds may peck in at first to get a worm, but it is a case similar to the discovery of roast pig as portrayed by Lamb. They alight on the ground and feed upon table scraps thrown to chickens, three of them being regular morning visitors, star boarders, to a pen of chickens I fed. They are very fond of peaches and pears, and volubly resent being driven from a tree of the fruit. They peck holes in ripening pomegranates and then the green fruit beetle helps finish the fruit. They relish grapes, both white and colored, and will spear one with their bill and carry it to a convenient crevice where it may be eaten at leisure. On bird-tables I have tried them with various articles of food and found very little that they rejected. They would not eat cantaloupe at all but were regular watermelon fiends, eating it three times a day and calling for more. They did not care for oranges, and I had no success in trying to teach them to eat ripe pickled olives. I tried the olive diet on them because two Mocking-birds in our yard in California learned to eat this fruit. Meat, raw and cooked, was eaten, and they ate suet greedily. Their favorite cut of beef was the T-bone steak and we always left some meat on the bone for them.

They picked it clean, and if a new supply was slow in coming the softer parts of the bone were devoured. This T-bone steak diet, however, was prior to the balloon ascension of beef. The bone was always nailed fast to the table and it furnished the birds with food and exercise, and us with edification. Mr. Frank Pinkley, custodian at the Casa Grande Ruins told me of a pair of these woodpeckers that stayed around his home and became quite tame, coming into the shed to drink from a can of water. He said they got into the habit of sucking the eggs in the chicken house, or at least pecking into them and eating of the contents. As the eggs were from blooded Wyandot hens he had to break the woodpeckers of the habit. I did not ask him how he did it, but fear that it was in the same way that he broke some Horned Owls of dining on the same brand of hens. Water seems to be the least of their worries; perhaps it is supplied by the giant cactus they peck into so freely.

This woodpecker has not the best disposition in the world, for he is very quarrelsome and intolerant. He fights his own kin and all the neighbors that



Fig. 55. YOUNG GILA WOODPECKERS CLINGING TO
SIDE OF SAGUARO.

he dares. He, or she, is a great bluffer however and when "called", frequently side-steps, subsides, or backs out entirely. I saw one approach a Bendire Thrasher that was eating, and suddenly pounce on him. He had the thrasher down and I was thinking of offering my friendly services as a board of arbitration, when the under bird crawled from beneath and soon gave the woodpecker the thrashing of his career. Several times I have seen the woodpeckers start to attack Bendire and Palmer thrashers, but they were always bluffed or beaten at the game. With the Bronzed Cowbirds it is a drawn battle, sometimes one and then the other backing down. Most other birds, such as Cardinals, Abert Towhees, Dwarf Cowbirds and Cactus Wrens do not attempt to assert their rights, but always take a rear seat. When it is woodpecker versus woodpecker it seems not to be a case of "Thrice armed is he who hath his quarrel just", but rather, "Four times he who gets his blow in fust".

I had two bird tables about twenty feet apart, and frequently one woodpecker might be peacefully assimilating watermelon, when another one would

come hurrying up and make a dive at him, causing a retreat to the other table. Frequently the new-comer would then follow and drive him from the second table. He seemingly would rather fight than eat if another one was eating at the same time. One day I saw him, or her, I forget which, hanging to the edge of the table busily eating steak, when another one perched on the table and made a vicious stab at him. He dodged backward clear under the table, though retaining his hold, and then bobbed up again, just like the Punch and

Judy show. The attack was renewed, and the dodging as well, but this time he did not "come back". Another day one of them was at work on a piece of melon when one of his fellows came and perched on the end of the table. The diner made a pass at the new comer, and seizing him by the feathers of the neck held him suspended over the end of the table for a few seconds.

Nesting sites in this locality are restricted to giant cactus (*Cereus giganteus*), cottonwood and willow, as they are the only suitable material for a nest excavation. More nests are found in the giant cactus, as these plants are more numerous than the others, and more "peckable", though the willows and cottonwoods along the river and the canals are well patronized when sufficiently decayed. Of the nests I examined I should say that fifty per cent were in the cactus, and the rest equally divided between the other trees mentioned. I say *examined*, advisedly as I saw many holes in the giant cactus that I did

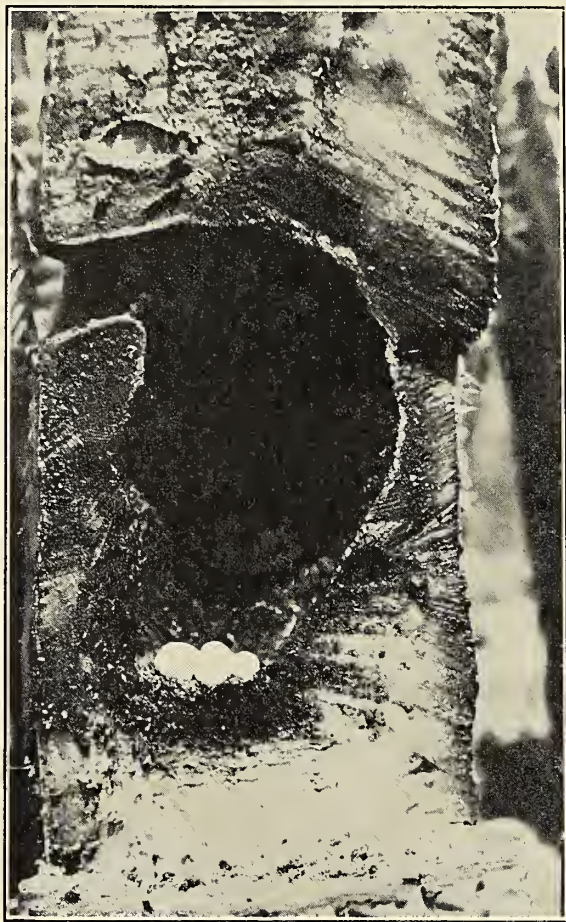


Fig. 56. NEST AND SET OF FIVE EGGS OF GILA WOODPECKER, IN SAGUARO, OR GIANT CACTUS. A PORTION OF THE TRUNK HAS BEEN CUT AWAY SO AS TO SHOW A VERTICAL SECTION OF THE NEST CAVITY.

not climb to. My ladder was only fourteen feet long and while I have "shinned up" a cactus several feet beyond the end of my ladder it was done only on special occasions. Life is too short and time too precious to spend any great portion of it digging thorns from the flesh.

As to the size of the holes in the cactus as compared with those in cottonwood and willow, I found no appreciable difference. I expected the holes in the cactus to average a little larger owing to possible greater ease in excavat-

ing but the difference was too slight to be sure of in measuring. Of eighteen holes measured, the average diameter was 1.95 inches; the largest was 2.25 inches and the smallest 1.87 inches. The deepest hole was 16 inches, with the entrance 2 inches in diameter. The shallowest one was 9 inches, with entrance a little less than 2 inches in diameter. The average depth of holes measured was a little more than 12 inches. Many of the holes were not exactly circular, there being a difference of from $\frac{1}{8}$ to nearly $\frac{1}{2}$ inch between the long and the short diameter if it be allowable to use the term in that way. Usually the nest hole runs straight in for a short distance before turning downward, the distance seemingly depending on the texture of the wood. In one case the hole went straight back for nine inches before turning downward. It was in a big cottonwood stump, and the bird excavated horizontally until decayed wood was reached, when the hole turned downward. This was an extreme case, as the depth horizontally is usually about three inches. In the giant cactus it varies according to the diameter of the trunk, the smaller the trunk the less distance before turning downward. The softness of the material is not a factor as it is the same in small and large trunks. In only two cases have I found nest holes that penetrated through the ribs of the cactus into the inner pith. In both cases the trunk was too small to furnish room for the nest between the outside and the ribs. The holes are dug in the soft pulp of the cactus, and the raw surface becomes calloused, as it were, forming a tough woody lining to the hole, which persists when the rest of the pulp decays. In this way the nest holes may be found intact, the hole being outlined by the hardened pulp, while the surround-



Fig. 57. NEST CAVITY OF GILA WOODPECKER, FROM GIANT CACTUS TRUNK, SHOWING THE HARDENED LINING REMOVED FROM THE PULPY STALK.

ing pulpy tissues have entirely decayed. An example of this is shown in the accompanying illustration (see fig. 57).

The nests were placed at different heights, those in the giant caetus ranging from fourteen feet to the limit of the plant, about thirty-five feet. As my ladder was only fourteen feet long the nests higher than twenty feet were inaccessible, except in the special cases already mentioned. Many of the nests seen were more than twenty feet from the ground, and as a rule the Gila Woodpecker seemed to place the nests higher in the caetus than did the Gilded Flicker. They appear to select large plants, and to patronize the same one for several years, as many unoccupied holes may be seen in it. Unoccupied, that is, as far as the woodpecker is concerned for the old holes are often used by other birds. I have never found two of these woodpeckers occupying the same tree, but frequently a Gilded Flicker, Elf Owl, and Ash-throated Flycatcher might be next door neighbors, and all housed under the same roof, as it were. In cottonwoods and willows there could not be so much choice as to height, for the site was decided by the location of soft or decayed wood, and sometimes the nest would be closer to the ground. In some stumps I have found the nests only five feet from the ground, in other cases as high as thirty feet or more.

The same nest hole is used more than one season, both in caetus and other locations. In 1913 I found a nest in a big cottonwood stump containing young. The next year it had young again, and I cut into it to measure the hole and count them. The entrance was on the slanting under side of the tree. This was the beforementioned hole that went in nine inches before turning downward, and it was quite a task to get at the bottom of the sixteen inch hole by enlarging the two inch entrance.

The height of the nesting season is evidently from the middle of April to the middle of May. Of thirteen occupied nests examined, twelve were found in May, eight of them containing young. May 10 was the latest date that eggs were found. July 10 I found three young about half grown, which might indicate that a second brood was sometimes raised. The number of eggs to a set is from three to five, with the odds on three. Seven of the thirteen nests contained three eggs or three young. The number of young in a nest, however, is not a sure indication of the number of eggs laid, as often some of them fail to hatch. Two sets of five eggs each were found, and two of three. Five nests had three young each, and one had four young; one nest had three young and two eggs; another three young and one egg; while another had one young. The average number to the nest, including eggs and young, was 3.46 but I believe a census taken early enough to count the eggs before they hatched would show a larger average.

It is not easy to determine just what food the young in the nest are given, but insects play a prominent part, as I have seen them frequently carried to the young. Fruit is also used, as I watched one parent carry ripe Lyeium berries several times to the nest; after emerging from the hole she would halt at the entrance each time and "lick her chops".

The old birds show much concern when the nest is approached, and remonstrate most volubly; if the young are handled and caused to cry, the old ones use terrible language. The birds are not very close sitters as a rule, but I cut into one nest without seeing any owner around and found her on the nest with three young just hatched and one egg pipped. She was not sick or stupid either, judging from the noise she made and the fight she put up, but was

merely on the job, and surely "on the peek". A new-looking hole in a cottonwood stump only five feet from the ground was noticed, and quietly approaching, I placed my fingers over the entrance. I soon received a vigorous peck from the lady of the house who was "coming up" with a mouth full of sawdust. I took her by the chin and drew her as gently as possible from the hole, but after petting her awhile, released her, for she made more noise than a sitting hen. Mr. Pinkley at the Casa Grande Ruins showed me a giant cactus that had been moved to their yard from a distance of a quarter of a mile. The cactus at the time of removal contained a nest of young woodpeckers, and the mother followed it up and raised the family to maturity, with exception of one youngster that became impaled on a thorn at the entrance to the nest.

The young are fed by the parents for a long time after leaving the nest, and they are regular little beggars. One pair stayed around our house for several months, and became quite tame. They were missed during the breeding season but soon came back with three youngsters to share the good things found on the bird tables in the yard. The young, although as large as their parents, would flutter their wings and sit with open beak as though the old ones told them to "open your mouth and shut your eyes", etc. The old ones would try to get them to eat watermelon placed on the tables, but the babies would not be shown; the parents had to put it in their mouths. They followed the parents from perch to perch, begging for food until I expected to see them chastised. The pair in question stayed with the three juvenals until they had them broken to eat for themselves, and then left. After a proper interval they came back with two more young ones, thus indicating that a second brood is sometimes raised. The abundant supply of food may have been a determining factor in the number of broods raised.

The Gila Woodpecker is so prone to adapt himself to different kinds of food that he seems fitted to persist in the face of settlement and civilization. Lack of suitable nesting sites might be thought to prove a stumbling block, but any old stump appears to answer, no matter whether high or low, so that difficulty might be surmounted. He might prove a pest to certain fruits if present in sufficient numbers, but that danger is remote, though I have known several to suffer through too much devotion to the succulent peach and pear.

The Red-shafted Flicker (*Colaptes cafer collaris*) spends the fall, winter, and the early spring months in this neighborhood but is absent during the breeding season. He usually appears the first week in September, the earliest

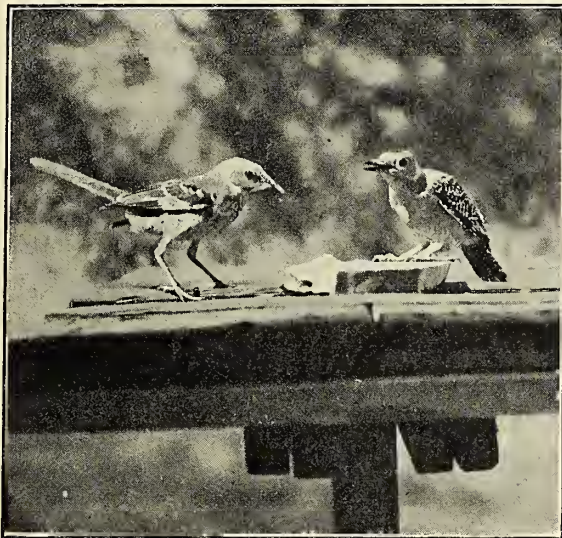


Fig. 58. YOUNG MOCKINGBIRD AND GILA WOODPECKER QUARRELING OVER A SLICE OF WATERMELON.

date I have recorded being September 4th. Most of the birds leave for their breeding grounds about the first of April, though I have recorded them as late as April 15. They sometimes join the Gila Woodpeckers in feeding on the stored corn on the roofs of the Indian homes.

Mearns Gilded Flicker (*Colaptes chrysoides mearnsi*) is abundant throughout this region, and is found in cottonwood and willow groves as well as wherever the giant cactus grows. The giant cactus is to this Flicker and the Gila Woodpecker, what the bamboo is to the inhabitants of some of the eastern islands. The cactus could get along without the flickers, though it probably would not feel properly ventilated without a few nest holes, and it would not look at all natural without them. The cactus furnishes the birds with home, shelter, food and possibly drink. They roost in the holes and seek them as retreat from rain storms. More than once when driving through a heavy rain have I seen a flicker's head thrust from a hole in an inquiring way as though to say "look who's here".

The Gilded Flickers are much quieter than the Gilas, and are not so much in evidence around homes, though they do not appear to be very timid. They are simply less sociable I presume. They resort regularly to the Indian corn-cribs and are seen in corn fields though I have never noticed them actually engaged on an ear of green corn as I have the Gilas. They probably attack the green corn but are quiet about the work instead of advertising their presence. They eat largely of the cactus fruit and possibly of the pulp at certain lean seasons. They are very fond of watermelon, and eat freely of it when it is placed on bird tables or on the ground in shade of tree or shed. They appear to feed frequently on the ground in the way the Red-shafted does, and are probably after ants most of the time. I have seen them at work on an ant hill and even peeking into the ground after the insects. When melon is placed both on the tables and on the ground, they resort more often to that on the ground while the Gilas prefer the tables. However, I have never seen the flickers drink from the pool of water provided, though the Gilas occasionally do.

They are peaceable and impress me as being eminently practical and matter of fact. Each one minds his own business and seems willing to live and let live. They do not assemble in numbers as the Gilas do sometimes, but are solitary or in pairs. They have the same habit of peeking the walls of buildings as have the Red-shafted Flickers, and one has worked spasmodically at the shingled gable of the school house here for the past three years. I take it to be the same individual, for he is rather tame and roosts each night above one of the window casings. A few times I have seen a Gila Woodpecker at work at the same point in the wall but usually his time is put in on a telephone pole in the yard. The notes of this flicker are quite similar to those of the Red-shafted, but not so frequent nor quite so loud.

The nests are found in giant cactus, cottonwood and willow, and in that order as to frequency, the giant cactus leading. Nests are in the giant cactus or Saguaro as it is called, far from water, and in cottonwood and willow along the river, on banks of the canals, or even standing in stagnant water pools. Of twenty-seven nests examined, containing eggs or young, twenty-one were in the Saguaro, four in willow, and two in cottonwood. Others were seen in cottonwood but too difficult of access, and many in the cactus were out of reach. If careful count were made I believe about ninety per cent would be found in the cactus. Nests in cottonwood and willow ranged from five to twenty-five

feet from the ground, and in Saguaros from eleven to twenty-five or thirty feet.

April is the month for Flicker nesting, as nineteen of the twenty-seven occupied nests were noted during that month. Eleven contained eggs, and eight had young. Of eight nests found in May, four had eggs and four contained young. April 11 was the earliest date for a complete set, and April 19 date of first young found. May 17 was the latest date of nest with eggs.

The number of eggs in a set varies, and it is hard to determine just what constitutes the average set. The number of infertile eggs seems to be quite large, and unless the nest is investigated before hatching or soon after, the count of young is not a correct indication of the number of eggs laid. In two cases I have seen one and two infertile eggs in a set before hatching, and a visit shortly afterwards showed the young all right but no sign of the infertile eggs. The eggs that fail to hatch are often broken, as the nest odor would indicate; at times they must be removed bodily as no odor or shells are in evidence. Occasionally an infertile egg is seen in the nest when the young are about ready to leave, showing in such cases neither accident nor removal. Of the twenty-seven nests examined, eight had five eggs, or young plus eggs, to



Fig. 59. YOUNG GILDED FLICKERS AT BASE OF SAGUARO.

make count of five for the set; eleven had four eggs or young, or young plus eggs; six nests contained three eggs or three young; and two nests had two young each. In no case did I find five young in a nest, and from the fact that infertile eggs were found with three and four young in a nest, it may be inferred that in many of the nests containing two, three or four young, more eggs had been laid. In no nest did I find more than five eggs, and I conclude that the set is from three to five eggs. From the data mentioned it would seem the average number in a set was 3.92 but deducting the two nests containing two young each, the average would be slightly more than four, which I believe somewhere near right.

The entrance to the nest holes varies much, as may be seen from the figures given. The smallest entrance measured $2\frac{3}{4}$ inches and the largest $4\frac{3}{4}$ inches. The shallowest hole was ten inches, and the deepest eighteen inches. The average diameter of entrance to thirty-six holes measured was 3.28 inches, and average depth of same holes was 12.75 inches. The entrance to the eighteen inch hole was three and one-half inches in diameter, and while the ratio is not constant, the shallower holes tend to have smaller entrances, and the

deeper holes have larger entrances. It was difficult to measure the diameter of the bottom of the nest holes without destroying the nest, and this was not to be considered when the hole was occupied, so very little data was secured. From the few measurements taken it may be stated that the bottom of the nest hole is from four and one-half to six inches in diameter. It is hardly correct to use the term diameter, as many of the hole bottoms were not nearly circular, one I measured being four inches one way and six the other. This variation seemed to be governed by the size of the cactus, as in the smaller plants there was not room to excavate a large circular bottom, and it had to be stretched one way. How the four young find growing room in some of the nests is a puzzle; I have never been able to fit them back when once removed, unless it was done soon after they hatched.

The Gilded Flickers do not object to using a hole after the entrance is enlarged. Two years ago I cut into a hole occupied by a Gila Woodpecker, and the following season a Flicker used it. In the same tree at the same time, I



Fig. 60. NEST AND SET OF FOUR EGGS OF GILDED FLICKER IN SAGUARO. A PORTION OF THE TRUNK HAS BEEN CUT AWAY, EXPOSING THE NEST CAVITY.

cut into a Flicker's nest, and the following year a Sparrow Hawk occupied it with four eggs.

While speaking of Gila Woodpeckers I mentioned catching one at work excavating a hole in a stump. A short time afterwards I examined the hole and found a Gilded Flicker at home there with three tiny young and two infertile eggs. She had taken the hole and enlarged it sufficiently to accommodate her family.

The young when first hatched are not very prepossessing to any one, except perhaps the parents. At first glance they remind one of

the pictured restoration of the Plesiosaurus, with their long twisting naked necks. The lower mandible was more than an eighth of an inch longer than the upper, and on the tip of each was the hard white growth used in opening the shell. At this nest the parents showed more solicitude than any others I had seen, coming as close as four feet from me. In most instances they are rather indifferent, even when the young loudly protest at being handled. One nest examined contained four nearly grown. When disturbed one of them flew from the nest and landed about one hundred yards distant, coming to the ground very awkwardly but flying as well as though he were a graduate from a school of aviation. Two others then left the nest, but made only short flights. I caught and tried to keep them still enough for a photo, but did not have enough hands to hold them still and operate the camera. They made enough noise to attract attention but neither parent put in appearance to investigate the disturbance.

They are not close sitters, and usually leave the nest before the tree is reached or the ladder placed against the trunk. As soon as an intruder's footsteps become audible the landlady pokes her head from the entrance, and soon after departs, never giving opportunity for capturing her on the nest. Deserted flicker nest holes are made use of by several other birds. In these holes I have often found Sparrow-hawks and Saguaro Screech Owls. Once a Bendire Thrasher made her nest in one with a crack in one side that let in light enough for her. In a partly excavated hole I found the nest of a Western Kingbird, and in another the nest of a House Finch. Occasionally the Cactus Wren builds in the deserted hole. In one Saguaro I found occupied nests of the Gilded Flicker, Gila Woodpecker, and Ash-throated Flycatcher. A Cactus Wren was in an ironwood at the base of the cactus, and, beyond reach of the ladder, were holes giving signs of occupancy by owls. I have never secured any of these flickers in the red phase of plumage described by Mr. Grinnell (University of California, Publications in Zoology, vol. 12, 1914, pp. 136-137) though I have noticed a few that seemed deeper in color than others.

Fort Bidwell, California, May 1, 1915.

FURTHER NOTES FROM THE SAN BERNARDINO MOUNTAINS

By ADRIAAN VAN ROSSEM and WRIGHT M. PIERCE

THESE NOTES are taken from a list of a hundred odd species noted in the vicinity of Big Bear Lake and Bluff Lake in the San Bernardino Mountains, southern California, between September 15 and 23, 1914. Only those species are included which for one reason or another may be deemed worthy of comment.

Colymbus nigricollis californicus. Eared Grebe. Common on Bear Lake, where, much to our surprise, downy young were not uncommon at this late date. A series of young taken September 17 graded all the way from apparently newly hatched chicks to fully grown birds in complete fall plumage. While the majority of adults were still in full, though rather worn, breeding dress two were taken which in life were not distinguishable from fall juvenals.

Porzana carolina. Sora. One was flushed from the grass at the edge of Big Bear Lake, September 17. Though recorded previously on but two occasions Soras are probably not uncommon migrants through the locality. It is doubtful if they breed there.

Oreortyx picta plumifera. Plumed Quail. Unexpectedly rare, in fact apparently absent from the region under consideration. The only evidence of the species found were some feathers in the trail at Clark's Ranch (elevation 5000 feet), in the Santa Ana Canyon.

Circus hudsonius. Marsh Hawk. A female seen beating over the lake, September 22.

Falco mexicanus. Prairie Falcon. A female of the year taken at Big Bear Lake on September 17, and another (judged to be a male) seen in the same locality September 20.

Xenopicus albolarvatus. White-headed Woodpecker. But very few of the specimens taken had completed the fall molt; the majority still retained the worn summer feathers on the belly and center of the breast. As this condition was common to both adults and birds of the year it seems not improbable that the fall molt of both occurs at approximately the same time. Those which had complete new plumage were juvenals, very likely of early broods.

White-headed Woodpeckers were often observed to drink at a small stream near our camp at Bear Lake, where a pine sapling grew from the edge of a small pool. On

this sapling the birds would alight, usually about three feet from the base, "hitch" quickly backwards down the trunk to the water, and, leaning sharply to one side, drink by quick, nervous dips. One was seen actually on the sand, evidently preparatory to drinking or bathing, but was frightened away by our approach.

Sphyrapicus ruber daggetti. Sierra Sapsucker. Not uncommon about Bluff Lake. Noticeably fewer in numbers at Bear Lake. All those taken were juvenals in nearly complete fall plumage, though all retained a belt of old feathers across the upper breast. In common with the Williamson Sapsuckers they were most often seen near the headwaters of the numerous little canyons running into the two lakes. There they were often gathered in threes or fours, flycatching after the manner of the California Woodpecker. On several occasions a Williamson was noted with these groups.

Sphyrapicus thyroideus. Williamson Sapsucker. Noted over the same range and in about the same numbers as the last species. Adults and young alike had entirely completed the fall molt.

Chordeiles virginianus hesperis. Pacific Nighthawk. One flew over camp at Bear Lake at sunset on the 18th of September. A long wait by the lake shore at dusk resulted in the sight of one (perhaps the same bird) flying over the lake.

Chaetura vauxi. Vaux Swift. A group of three seen flying west along the shore of Bear Lake, September 18.

Calypte anna. Anna Hummingbird. Female taken at Bear Lake, September 22.

Stellula calliope. Calliope Hummingbird. Apparently rather common near the summit above Clark's Ranch, where several females or young were feeding from a patch of flowers on September 16.

Nuttallornis borealis. Olive-sided Flycatcher. Still present in considerable numbers. Noted over the entire region covered.

Myiochanes richardsoni. Western Wood Pewee. A pair was usually in evidence about camp at Bear Lake. Last noted on September 20, when a young bird was taken at a water hole about half way between Bear and Baldwin lakes. This bird was in juvenile plumage and was accompanied by two adults.

Empidonax wrighti? Wright Flycatcher. One was seen at very close range in a willow clump near Bear Lake on September 22. Flycatchers were seen on one or two other occasions previous to this, but none was taken.

Otocoris alpestris actia. California Horned Lark. Rather uncommon in the dry pastures near Bear Lake.

Cyanocitta stelleri frontalis. Blue-fronted Jay. Though most of the year's young, and all the adults, apparently had completed the fall molt, one juvenal taken September 18 was still in ragged plumage. The old feathers still predominated on the upper parts, head and neck, and on the central underparts.

Aphelocoma californica. California Jay. Though common on the lower, chaparral-covered slopes, this species was noted but once in the higher mountains, where a bird was seen near the divide between Bear and Baldwin lakes, at 7000 feet.

Cyanocephalus cyanocephalus. Pinyon Jay. Common in good sized, straggling flocks, about the east end of Bear Lake, and in smaller numbers about Bluff Lake. In the series taken the adults average lighter in color, and the feathers already show signs of wear, while the birds of the year are in more recently acquired, and consequently brighter, plumage.

Poocetes gramineus confinis. Western Vesper Sparrow. Apparently not uncommon on the dry brushy flats near the east end of Bear Lake. First noted September 17.

Zonotrichia leucophrys gambeli. Gambel Sparrow. First noted September 18, when one was taken at Bear Lake. Seen thereafter in small numbers.

Passerella iliaca schistacea. Slate-colored Sparrow. Two taken September 23, one on the summit between Bluff Lake and the Santa Ana Canyon, and another in the dense manzanita brush above Clark's Ranch in the same canyon. Five or six were noted scattered between these two points.

Passerella iliaca stephensi. Stephens Fox Sparrow. Still present in the mountains, though not in anything like the numbers in which it is found during the summer months. Apparently absent altogether from the immediate vicinity of Bluff Lake, where during the breeding season it is abundant. Eight specimens were taken, one on the summit between Bluff Lake and the Santa Ana Canyon (September 16), and seven in a small canyon near the east end of Bear Lake (September 22). All were seemingly adults and

mostly in rather ragged plumage. The old feathers had been molted, and the new ones not fully developed, many being still ensheathed at their bases. As young birds in complete fall plumage were taken in the same general locality in August (1910), it is fair to conclude that the post-juvenal molt antedates by several weeks the annual molt of the adults.

Oreospiza chlorura. Green-tailed Towhee. Noted in moderate numbers; rather more in evidence than during the summer months.

Piranga ludoviciana. Western Tanager. Noted only on September 22, when one was taken and another seen.

Vermivora rubricapilla gutturalis. Calaveras Warbler. Recorded on but three occasions, the last date being September 22.

Vermivora celata lutescens. Lutescent Warbler. Apparently absent from the higher mountains. Common about Clark's Ranch in the Santa Ana Canyon, both on September 15 and September 23.

Dendroica nigrescens. Black-throated Gray Warbler. One taken and another seen at Bear Lake, September 22.

Oporornis tolmiei. Macgillivray Warbler. One seen at Bear Lake September 19, and two on the summit between Bluff Lake and the Santa Ana, September 23.

Geothlypis trichas occidentalis. Western Yellow-throat. Observed but once, when a male of the year was taken at Bear Lake, September 22.

Wilsonia pusilla chryseola. Golden Pileolated Warbler. Noted only near Bear Lake September 21 and 22.

Troglodytes aedon parkmani. Western House Wren. Two seen on several occasions in a willow clump near Bear Lake.

Myadestes townsendi. Townsend Solitaire. Seen on the summit above Bluff Lake, at Bear Lake and at Baldwin's Lake. Usually associated with small flocks of Western Bluebirds.

Planesticus migratorius propinquus. Western Robin. A bird of the year taken September 22 is still plentifully sprinkled with spotted juvenal feathers. But one other robin seen, and that on the same date.

Dos Cabezas, Arizona, November 20, 1914.

FROM FIELD AND STUDY

Dwarf Cowbird on the Coronado Islands.—On a recent visit to North Island of the Coronados group, one of our party, Mr. C. O. Reis, secured an adult male of the Dwarf Cowbird (*Molothrus ater obscurus*). The bird was taken May 31, 1915.—A. E. COLBURN, *Los Angeles, California*.

Dwarf Cowbird in the San Diegan Region.—Although the eggs of the Cowbird (*Molothrus ater obscurus*) have been reported from the San Diegan region not uncommonly, specimens of the bird are not extensively recorded. Miss Emily Hollister of the State Normal School, Los Angeles, placed in my hands on January 26, 1915, a female of this species. The bird had been picked up dead by one of her students within the city limits of Los Angeles. It was in good condition and plumage. The ungual phalanges of all toes of the right foot were missing, but the scars were old, and the injury could not have interfered greatly with the bird's activities. On June 5, 1915, Mr. J. E. Law and the writer were collecting among willows along the Los Angeles River near Lankershim, when the notes of a cowbird were heard. The bird, an adult male, was finally secured by Mr. Law, who suggested its being recorded in connection with the above.—L. H. MILLER, *Los Angeles, California*.

A Striking Plumage of the Western Tanager.—On May 16, 1915, Mrs. Mary Case Durant of Los Angeles, brought to me a specimen of the Western Tanager (*Piranga ludoviciana*), which had broken its head in collision with electric wires at her residence, in this city. The bird is striking because of the extreme development of the red factor in its plumage. Not only is the head unusually intense in color, but red feathers invade the rump patch and the breast and belly regions, while the entire anal tuft is red also.—L. H. MILLER, *Los Angeles, California*.

Bluebird Breeding in Los Angeles.—The Western Bluebird (*Sialia mexicana occidentalis*) so seldom breeds in low country of the San Diegan region that a fledgling of the species picked up in a lot near the State Normal School, Los Angeles, constitutes a surprise worth recording. The bird was scarcely able to fly, and could not have traveled far from its parental nesting site. The date was May 31, 1915.—L. H. MILLER, *Los Angeles, California*.

Pinyon Jays in Los Angeles.—During the months of December, January, February, and March, 1914-15, there remained in the vicinity of my home in this city a flock of these erratic birds, *Cyanocephalus cyanocephalus*. They were heard at intervals and were seen by Miss Mary Mann Miller and myself. A good view at close range with Zeiss binoculars, together with their unmistakable calls, renders identification quite positive.—L. H. MILLER, *Los Angeles, California*.

History of a Nest of the Green-backed Goldfinch (*Astragalinus psaltria hesperophilus*).—April 4, 1915. Nest just started; placed in a four-year-old lemon tree, five feet from the ground. The parent birds had been noted around the lemon tree for several days previous to this date, and were evidently house hunting. Fine weather.

April 11. Nest was now practically finished, but no birds were in sight. Still fine weather.

April 13. Nest now received a few stray feathers for lining. No birds in sight. Fine weather.

April 14. Female on nest at 6 A. M. Two eggs in nest at 6:45 A. M., and bird away. I looked again at 7:30 and she was still away. Partly cloudy.

April 15. Female on nest at 6 A. M. Two eggs in nest at 6:45 A. M., and bird away. I looked again at 7:30, and she was still gone. Partly cloudy.

April 16. Female on nest at 6 A. M., at 7 A. M., and 6 P. M. Weather very foggy.

April 17. Female on nest at 6 A. M. I then flushed her, and the nest contained four eggs. Evidently she had started to incubate. Weather quite misty.

April 18. Female on nest all day apparently. Weather cloudy. Bird is now getting quite a bit tamer.

April 19. Female on nest at 6 A. M., and so tame I nearly touched her before she flew. Cloudy.

April 20 to 23. No observations.

April 24. The old bird now had to be taken from the nest, as she would not leave voluntarily. Cloudy.

April 25. The bird now fought me when I wanted to examine the nest.

April 26. No change.

April 27. At 5 A. M. one bird had just hatched.

April 28. At 6:30 P. M. three were hatched.

April 29. At 6:30 A. M. four were hatched. Bird held on to nest with her claws when I attempted to remove her.

April 30. 6:30 A. M. Old bird still holding the fort, and very pugnacious.

April 31. 6 P. M. Finis. Nest torn down and a few stray feathers on the ground under the tree. The whole family just about made a meal for one of my neighbor's pet cats.—W. LEE CHAMBERS, *Los Angeles, California*.

Miscellaneous Records from Southern California.—Wilson Phalarope (*Steganopus tricolor*). On April 17, 1915, I shot a pair of Wilson Phalaropes in breeding plumage on one of the ponds of the Pomona Recreation Club, near Corona, California. They were swimming about with several Cinnamon Teal (*Querquedula cyanoptera*) and a pair of Baldpate (*Mareca americana*). The two birds are: female, no. 814, and male, no. 815, collection of W. M. P. On May 11, 1915, I shot a female Wilson Phalarope in breeding plumage, on a pond near Corona, California. The bird is now no. 872 of my collection.

Bald Eagle (*Haliaeetus l. leucocephalus*). While collecting on one of the sloughs near San Pedro, California, May 16, 1915, one of these beautiful birds came quite near me. It circled about several times so that identification was certain.

I saw an adult Bald Eagle on April 11, 1915, sitting on a dead bush on one of the rocky cliffs along the ocean near Laguna Beach, California. I was able to approach very near to the bird, its white head and tail making identification certain.

Prairie Falcon (*Falco mexicanus*). The following notes on the occurrence of the Prairie Falcon on the Pacific slope during fall and winter may be of interest. On Octo-

ber 8, 1914, while hunting doves near Chino, California, I shot a female Prairie Falcon that was trying to get a dove that I had flushed from the sunflowers. Later on the same day another of these beautiful falcons flew over me a little too far to shoot. On December 9, 1914, I shot a female Prairie Falcon from a telephone pole near the beach not far from Oceanside, California. On January 9, 1915, I collected another female Prairie Falcon near Chino, California. My attention was drawn to this bird, which was sitting in a large branching willow, by the actions of some Red-winged Blackbirds (*Agelaius phoeniceus neutralis*) that were sitting about in the same tree with the falcon. Several of their number kept persistently flying at the falcon, who apparently cared little for their actions, as he sat quietly until I approached the tree.

Western Flycatcher (*Empidonax difficilis difficilis*). On July 5, 1914, in the upper part of Bear Canyon, a branch of the West Fork of the San Gabriel, I found a nest containing three eggs, incubation begun, of the Western Flycatcher. Then on July 17, 1914, at Cold Brook Camp, elevation 3500 feet, in the North Fork, another branch of the West Fork of the San Gabriel, I found another nest of the Western Flycatcher containing three fresh eggs. This last nest was placed on a beam of the dance hall, where there were many people going in and out all the time. The bird did not seem to be bothered at all by the continual noise and disturbance. The late nesting dates are noteworthy.

Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*). While hunting on the ponds of the Pomona Recreation Club, near Corona, on December 13, 1914, I shot a female Vermilion Flycatcher. The bird was feeding in a willow tree that grew well out in a pond. As the species is of rather rare occurrence in this locality I thought the record worthy of note.

Phainopepla (*Phainopepla nitens*). On January 10, 1915, I shot a male Phainopepla, and saw another, on the Pomona Recreation Club, near Corona, California. These grounds are located in the willow bottom near the Santa Ana River. The bird was feeding on mistletoe berries. Several times during December I had heard the note of the Phainopepla in this same locality, but it was not until the above date that I actually saw one. Since then I have heard their call several times. Then on January 23, 1915, H. White obtained another specimen in the same place. This goes further to prove that the Phainopepla winters in small numbers in favorable localities in southern California. However, I have not met with them in the foothill and mesa regions until well along in March.

Western Winter Wren (*Nannus hiemalis pacificus*). I collected a female of this species on January 21, 1915, at the mouth of San Dimas Canyon, Los Angeles County, California. It is interesting to note that this is the only one that I have seen during about twenty collecting trips to the locality during this winter. Nor have I met with the bird on several other trips during this period, from the base of the foothills to 5000 feet elevation in the mountains of this locality.—WRIGHT M. PIERCE, *Claremont, California*.

California Screech Owl in the Humboldt Bay Region.—The lack of published statements regarding the occurrence of any form of *Otus asio* in the vicinity of Humboldt Bay, California, makes it desirable that record be made of certain specimens recently taken in that region. Mr. Franklin J. Smith has donated two of several screech owls he has secured, one to the Museum of Vertebrate Zoology, and one to the Los Angeles Museum of History, Science and Art. These are both breeding females, from the vicinity of Eureka, and are essentially alike in appearance. Detailed comparison has been made between one of these birds (Mus. Vert. Zool. no. 25378) and series from other parts of the Pacific coast. As compared with *Otus asio bendirei* from the San Francisco Bay region it is strikingly dark colored, and of large size (length of wing, 176 mm.). As compared with a topotype of *brewsteri* it is darker and less reddish. Size comparisons with the latter are not possible, as the two are of different sex. Compared with an example of *kennicotti* from Tacoma, it is slightly larger and much less reddish. The striking feature of the two Humboldt Bay birds is that while they are of intensely dark color, there is little of reddish or rich brown in their appearance. They depart appreciably from the normal of *bendirei* of the San Francisco Bay region, but do not approach the more reddish hue of *brewsteri* and *kennicotti*. For the present it seems best to class them with *bendirei*, representing an extreme of difference from *quercinus* of southern California, and await the acquisition of additional material from the northern coast region to more definitely settle their status.—H. S. SWARTH, *Museum of History, Science and Art, Los Angeles, California*.

THE CONDOR

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EDITORIAL NOTES AND NEWS

THE PACIFIC COAST MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION

For the first time in the history of the organization, a regular congress of the American Ornithologists' Union has convened in western North America. On Monday evening, May 17, 1915, the Thirty-third Stated Meeting of the Union was called to order in the rooms of the California Academy of Sciences, in San Francisco. This, the formal session of the Fellows, was devoted to the transaction of general business. Dr. A. K. Fisher presided, with the following Fellows present: Dr. Jonathan Dwight, of New York; Dr. A. K. Fisher, of Washington; Professor W. K. Fisher, of Stanford; Dr. Joseph Grinnell, of the University of California; Mr. Leverett M. Loomis, of San Francisco; Mr. Joseph Mailliard, of San Francisco; Dr. T. S. Palmer, of Washington; Dr. C. Hart Merriam, of Washington; Mr. John H. Sage, of Portland, Connecticut; Dr. Witmer Stone, of

Philadelphia; and Mr. Otto Widmann, of St. Louis.

On the following three days the public sessions, those of general interest, were held in a centrally located auditorium on the Exposition grounds. There was an average attendance of 50 members of the A. O. U. and of the Cooper Ornithological Club, with many visitors. The following program of papers was presented.

Tuesday forenoon, May 18.

1. "Notes on the Life-history of Penguins, with Special Reference to the Origin of Certain Instincts"; with superb lantern slides; by Robert Cushman Murphy, of Brooklyn.

2. "Oregon Bird-life in Motion Pictures"; the latest successes in motion photography; by William L. Finley, of Portland, Oregon.

Lunch was served to the A. O. U. and their friends at the Inside Inn, on the Exposition Grounds.

Tuesday afternoon, May 18.

3. "Philadelphia to the Coast in Early Days, and the Development of Ornithology Prior to 1850"; by Dr. Witmer Stone, of Philadelphia.

4. "In Memoriam—Theodore Nicholas Gill"; by Dr. T. S. Palmer, of Washington.

5. "The Migration of Albatrosses and Petrels"; by Mr. Leverett Mills Loomis, of San Francisco; discussion by Dr. T. S. Palmer, and Messrs. Murphy, Nichols and Loomis.

6. "A Late Nesting Record for the California Woodpecker"; by Mrs. Harriet Williams Myers, of Los Angeles.

7. "The Average Age of the Herring Gull"; by Mr. John Treadwell Nichols, of New York City.

Dinner in the evening for all members of the A. O. U. and C. O. C., and their invited friends, at the Clift Hotel. Between fifty and sixty were present and the occasion was a most happy one.

Wednesday forenoon, May 19.

8. "Puzzling Immature Plumages of Some Birds"; by Dr. Jonathan Dwight, of New York City; discussion by Messrs. Loomis and Dwight.

9. "The Shore-birds of California"; illustrated by a long series of artistic lantern slides; by W. Leon Dawson, of Santa Barbara.

10. "The Pacific Coast Races of *Thryomanes bewickii*"; by Mr. Harry S. Swarth, of Los Angeles; read by title.

Lunch served to the A. O. U. and C. O. C. at the Chinese restaurant in the Food Products building.

Wednesday afternoon, May 19.

11. "Birds of the Grand Canyon, Arizona"; by Dr. T. S. Palmer, of Washington.

12. The Salisbury wild life motion pictures, presented, with comments, by Dr. Harold C. Bryant, of Berkeley.

13. "Farallon Island Bird Life"; in motion picture; by Mr. Paul J. Fair, of Oakland.

14. "Niche of the California Thrasher"; by Dr. Joseph Grinnell, of Berkeley. Discussion by Dr. T. S. Palmer, Mrs. Myers, and Messrs. Dawson and Grinnell.

Thursday forenoon, May 20.

15. "The Genus Problem in Present Day Nomenclature"; an able discussion of a pressing problem; by Dr. Witmer Stone, of Philadelphia.

16. "The Work of the National Association of Audubon Societies"; by Mr. T. Gilbert Pearson, of New York City.

17. "Two Characteristic California Waders: the Black-necked Stilt and the Snowy Plover"; with lantern slides; by Mr. Tracy I. Storer, of Berkeley; remarks by Messrs. Murphy, Dawson and Joseph Mailliard.

18. "Food Habits of the Roadrunner"; by Dr. Harold C. Bryant, of Berkeley.

19. "History of the Bohemian Waxwing in British Columbia"; by Mr. Ernest M. Anderson; read by title.

On Thursday afternoon a portion of the visiting delegates were conducted to the summit of Mt. Tamalpais. Others visited the California Museum of Vertebrate Zoology at Berkeley. On Friday an all-day excursion on the U. S. Fish Commission ship, Albatross, was enjoyed by over eighty members and friends of the two ornithological societies. Snap shots of some of the participants are presented on the last two pages of this issue of THE CONDOR. On Saturday the convention disbanded. A number of the A. O. U. people went to the Yosemite Valley where some of them listened for the first time to the thrilling notes of the Canyon Wren and Water Ouzel.

The above brief outline of happenings at the A. O. U. Congress can give but a faint idea of the atmosphere of the occasion. The setting at the Exposition was unique and doubtless will never be duplicated. We voice the hope, however, that it may become the custom to hold an A. O. U. Congress on the Pacific Coast regularly in the future, say every fifth year.

PUBLICATIONS REVIEWED

SPENCER | FULLERTON BAIRD | A BIOGRAPHY | including selections from his correspondence | with Audubon, Agassiz, Dana, and others | By | WILLIAM HEALEY DALL, A. M., D. Sc. | with nineteen illustrations | [vignette] | Philadelphia & London | J. B. Lippincott Company | 1915 ["published April"] | pp. xvi + 462, 19 unnumbered plates. (\$3.50.)

The book of the above title is of more than ordinary interest to western bird students. Baird was intimately identified with the scientific operations of the Pacific Railroad Surveys and with the publication of

the results of those operations. The wealth of biographical detail collected by Dr. Dall concerning Professor Baird thus provides a great number of facts relative to the early history of ornithology in our western states.

The book contains many letters written by the notable naturalists of the times, and many interesting side-lights are thereby thrown upon the relationships and characters of these men. Baird himself was evidently the inspiring genius of his period. Practically every important achievement in the field of vertebrate zoology seemed to have been either initiated by him or prominently fostered by him.

We owe a very great deal to Dr. Dall for his expenditure of labor in making available a full account of Baird's life and activities. This is the one biography of recent publication that has appealed to the reviewer as most emphatically worth reading. The present-day naturalist, young and old alike, cannot fail to get inspiration as well as enjoyment out of it.—J. GRINNELL.

BIRDS OF NEW YORK, by ELON HOWARD EATON. Part 2. General Chapters; Land Birds. 1914 (our copy received March 20, 1915). Pp. 1-719, pls. 43-106. (For full title and review-notice of Part 1, see CONDOR, XII, 1910, p. 207.)

As with Part 1, the prominent feature of this elaborate state publication lies in its illustrations. There are colored plates, representing nearly every species of bird indigenous to New York, from the brush of L. A. Fuertes. These have been reproduced for the most part with marked success.

The text treatment of species is necessarily not exhaustive. The descriptions are brief, and properly so where colored plates are so bounteously provided as in the present book. "Distribution" and "Haunts and habits" naturally relate almost wholly to the state concerned.

Of general interest are the introductory chapters. These bear titles as follows: Bird ecology; the economic value of birds; the status of our bird laws; Special measures for increasing bird life; Bird refuges; Private preserves. Under these captions the various matters are impartially discussed, the conclusions according for the most part with the results of experience elsewhere. As means of increasing bird population, Eaton gives first importance to the erection of artificial nesting sites, this with due regard to the predilections of English Sparrows and house cats. The planting of food-producing trees, and the provision of watering places during the summer, are also recommended.

With so comprehensive a work on its ornithology, New York State takes front rank as a commonwealth which recognizes the importance of supplying its schools and libraries with adequate treatises upon its natural history.—J. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

APRIL.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the California Academy of Sciences, 343 Sansome Street, San Francisco, April 15, 1915, at 8 P. M. President Mailliard was in the chair with the following members present: Mrs. Grinnell, and Messrs. Evermann, Grinnell, Ray, Reynolds, Squires, Storer and Trenor. Two visitors were present.

The minutes of the Northern Division March meeting were read and approved and the minutes of the Southern Division March meeting read. Mrs. Mary Van E. Ferguson and the twenty-two persons proposed at the Southern Division in February were elected to membership. The applications of Judge F. W. Henshaw, Supreme Court, San Francisco, proposed by J. Grinnell, and four persons from the Southern Division were read.

A communication from Professor J. N. Bowman, Secretary of the Pacific Association of Scientific Societies, was received stating that the constitution of the Pacific Division of the American Association for the Advancement of Science had received the necessary two-thirds vote from the constituent societies and that the work of the Pacific Association will be taken over by the Pacific Division at the close of the August meeting.

President Joseph Mailliard, as chairman of the arrangements committee for the A. O. U. meeting in San Francisco in May, outlined the plan of entertainment which will be provided. The plans were discussed by a number of those present. Notes on rare or unusual occurrences were offered by several of those present. Joseph Grinnell presented some of the problems as to the inclusion and rejection and the status of a number of species of birds in his forthcoming State List. A lively discussion followed. Adjourned.—TRACY I. STORER, *Secretary*.

SOUTHERN DIVISION

APRIL.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art Thursday evening, April 29. President Law was in the chair and the following members were in attendance: Mrs. Husher, and Messrs. Blain, Brown, Chambers, Colburn, Cookman, Daggett, Holland, King, Law, Little, Morcom, Miller, Nokes, Polkinghorn, Rich, Swarth

and Wyman. Visitors present were Mrs. Law, Dr. and Mrs. S. A. Williams, and Mr. and Mrs. Emerson Atkins.

The minutes of the March meeting were read and approved, followed by the reading of the minutes of the April meeting of the Intermountain Chapter. New members were elected as follows: Miss Ellen G. Scott, Tropico, California; Mrs. Katherine S. Wakeley, Los Angeles; J. Frank Wilson, Monrovia, California; Chas. O. Trowbridge, Framingham Center, Mass. New names proposed were: W. W. Richards, Oakland; Carroll DeW. Scott, Pacific Beach; E. B. Trescot, Merced; all presented by W. Lee Chambers; and George Tallman, Los Angeles, proposed by G. Willett.

The committee on arrangements for entertainment of the A. O. U. reported on the probable plans for the occasion. The greater part of the evening was devoted to an exhibition of lantern slides of the bird colonies of Laysan Island. These were from pictures taken by Mr. George Willett during his visit to the island in 1913. Adjourned.—H. S. SWARTH, *Secretary*.

MAY.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, May 27, 1915, with President Law in the chair and the following members present: Miss Germain, and Messrs. Brown, Chambers, Daggett, Holland, Jewett, Little, Miller, Rich, Swarth, Tallman, and Wyman. Mrs. Law was a visitor.

The minutes of the April meeting were read and approved, followed by the April minutes of the Northern Division and the May minutes of the Inter-Mountain Chapter. Four new members were elected: George Tallman, Los Angeles; E. B. Trescot, Merced; Carroll DeW. Scott, Pacific Beach; W. W. Richards, Oakland. One new name was presented, Richard D. Lusk, Winkelman, Arizona, proposed by W. Lee Chambers. A motion was passed confirming the elections at the April Northern Division meeting.

A communication was read from officials of the American Association for the Advancement of Science, urging Cooper Club members to join the Association, which was strongly endorsed by such club members as happened already to belong. Mr. Wyman reported on bird banding, and Mr. Law gave many details of the American Ornithologists' Union meeting at San Francisco the previous week. Adjourned.—H. S. SWARTH, *Secretary*.



Fig. 61. SNAP SHOTS FROM THE A. O. U. MEETING AT SAN FRANCISCO. A. DR. A. K. FISHER AND DR. JONATHAN DWIGHT, JR. B. LOWER ROW: MESDAMES STONE, LAW, AND WIDMANN; MESSRS. STONE, FISHER, AND SAGE. C. DR. C. HART MERRIAM AND MR. J. EUGENE LAW. D. MESSRS. W. OTTO EMERSON, TRACY I. STORER, AND H. C. BRYANT.

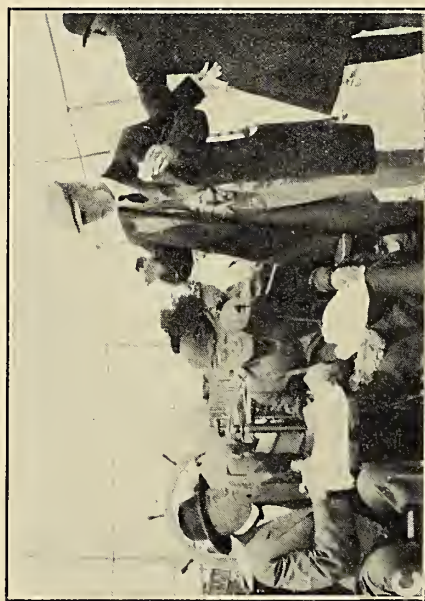
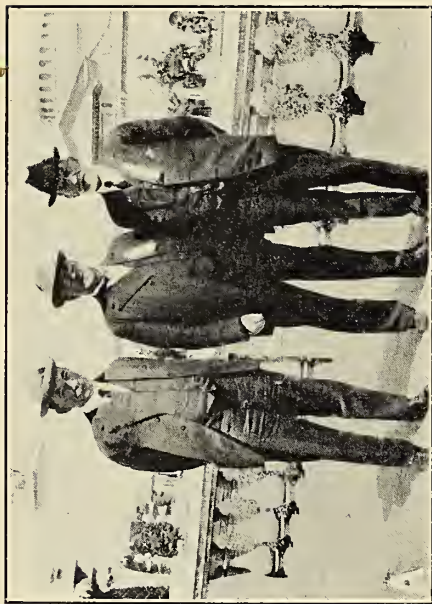
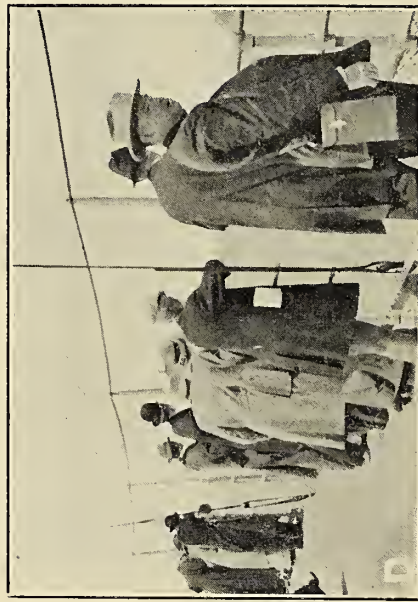
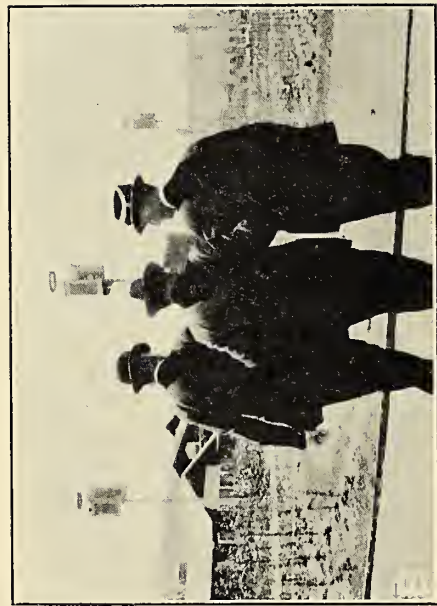


Fig. 62. SNAP SHOTS FROM THE A. O. U. MEETING AT SAN FRANCISCO. A. MESSRS. WITMER STONE, A. K. FISHER, AND JOHN H. SAGE. B. MESSRS. JOHN W. MAILLIARD, A. K. FISHER, AND JOSEPH MAILLIARD. C. MR. AND MRS. OTTO WIDMANN, MR. JOHN H. SAGE, AND DR. JONATHAN DWIGHT, JR. D. MR. R. BRUCE HORSFALL, DR. JONATHAN DWIGHT, JR., MR. AND MRS. J. EUGENE LAW, MR. JOHN H. SAGE, MR. J. T. NICHOLS, DR. A. K. FISHER.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

EXCHANGE—Will exchange sets from Europe and Africa for American sets.—J. CLAIRE WOOD, 179 17th Street, Detroit, Mich.

FOR SALE or EXCHANGE—Premo Camera, full outfit, 4x5, in A1 condition; collections of marine and fresh-water shells, 2000 species, 5000 specimens; of minerals, 275 specimens; of fossils, 250 specimens; 70 glass mounts; 216 moths and butterflies; 6-foot mounted alligator; a large list of curios; a collection of old French letters and parchments, dates 1427 to 1800, two signed by Louis xv. Will sell any or all of above for cash, or exchange for sets of birds eggs, mounted birds, bird skins, Indian stone relics, books or magazines.—H. F. DUPREY, *Dixon, Calif.*

WANTED—Complete sets of Wilson Bulletin and Ornithologist & Oologist; also Forest and Stream before 1896.—JOHN C. PHILLIPS, *Windyknob, Wenham, Mass.*

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A Magazine of Western
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Volume XVII September-October, 1915 Number 5



COOPER ORNITHOLOGICAL CLUB

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SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month. Take south-bound car from town; on Spring Street the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

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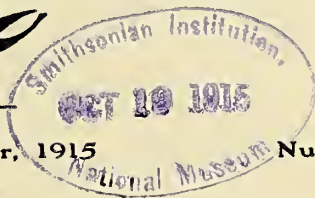
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Volume XVII

September-October, 1915

Number 5



CHARACTERISTIC BIRDS OF THE DAKOTA PRAIRIES

I. IN THE OPEN GRASSLAND

By FLORENCE MERRIAM BAILEY

THE NORTHERN PACIFIC carried us out across the dead level of the old bed of Lake Agassiz and then up over the North Dakota couteau whose gentle morainal swells were left by the ice sheet. The bigness of the great open prairies slowly sinks into your consciousness as hour after hour you look out upon grain fields interrupted only at long intervals by a farm house, or a way station made conspicuous by tall grain elevators.

As we looked from the car windows we eagerly scanned the small sloughs, enticing little Dakota sloughs, small ponds in saucer-like depressions of the prairie, around which many of the prairie birds nest; but though we saw ducks sitting on the water and handsome Yellow-headed Blackbirds and fascinating Black Terns flying about, the train passed too rapidly for the recognition of many species.

Beating low over the fields was one bird whose identity could not be questioned, the Short-eared Owl, a characteristic bird of the prairie region. Of the anomalous day-hunting owls my experience had been limited to the Burrowing. How I longed to see *flammeus*! My first sight of one had been the other side of the Minnesota line when, on a fence post, a tall bird standing half round shoulderedly peering at us suddenly broke away, flapping off on wide brown wings. What bird-lover does not know the thrill of such a moment! Here was the Short-eared at last! An owl with big round head and slowly flapping wings bound not for dense woods but for the big bare prairie; an owl that seems at first bluish as much of a target as an eagle flying freely about in the day time, making its nest and rearing its family safely in the open! Eloquent commentary on the great untenanted prairie!

A nest of this Flat-faced Owl, as it is called locally, was later reported to me on one of the big wheat farms bordering Stump Lake. It was said to be "in the

corner of S——'s wheat, near the first dead furrow," a location that sounded sufficiently definite until we drove over to investigate. Five people in all proved the wisdom of the owl's selection of a nesting site. It was the first nest the farmer had ever heard of in the wheat, but its proximity to the lane of the dead furrow made it seem possible, and as the wheat had not attained its full growth when the nest was reported to have two eggs—on June 19—the close level-topped stand of grain had risen around the nest with its increasing need for protection. An old owl who was presumably interested in the nest was seen hunting over the brushy shore flats at high noon, before there were impatient young to call for such an un-owl-like proceeding; and when the men were tramping the dead furrow at sundown, a *flammeus* hunting over the undulations of the grassy prairie turned back and flying in, lit on the ground and stood solemnly gazing at the exploring party.

Later in the season (July 8 and 9, 1912), between Stump Lake and Devil's Lake, we saw a number of Short-eared Owls flying about freely in the daytime. A dark-colored young one flying low over the ground in the strong morning light was apparently doing its own hunting, but a family of grown young in another place was sitting around on stone piles as if waiting to be fed. One of the old light-colored hunters whom we saw beating over the ground, as we watched made a suggestive pounce, stretching forward drolly as if sliding to a base. Another *flammeus* on whose premises we ate a camp supper perched spectacularly on top of a telephone pole watching us for some time, but finally flew out over the fields to get its own supper.

While the owls were easily recognized at quite a distance, when pin-heads in the big prairie landscape they had to be distinguished from Marsh Hawks; for, while a few families of owls might be seen in a twenty-mile drive across the prairie, Marsh Hawks were seen so frequently that it seemed as if their territories must sometimes overlap.

While Asio and Circus were landscape features, two of the largest, most characteristic, and perhaps generally distributed birds of the prairie region, the Prairie Hen and Sharp-tailed Grouse, were rarely seen unless by some lucky accident they were flushed from cover—a sore disappointment to me, for the thought of being among them had been one of the strongest allurements to my journey to North Dakota.

What bird student, out of their range, has not looked upon the pictures and museum groups of Prairie Hen dances with rapt wonder and dreamed fondly of witnessing them some day for himself? We were too late for the dances in North Dakota, but on our way north had one memorable experience in Minnesota.

"There are the Prairie Hens crowing!" the men would interrupt themselves to exclaim over what seemed to my unaccustomed ears only faint squeaky sounds and a hint of low booming. As the birds are at their best in the early morning, we were called at 4:30 with an urgent, "The Prairie Hens are crowing now!" and were soon driving between meadows white with dew, drinking in the cold invigorating air, mountain air compared with what we had escaped from. Keeping our field glasses ready to sweep every plowed field that came in sight and our ears strained for the low occasional booming, we turned corner after corner in the direction of the sound till suddenly the horses were reined in with the exclamation, "There are two hens!"

The female was walking about demurely, but the male—was there ever such a droll figure? As I gazed spellbound, the cocks of the National Museum group rose before me. It was their exact pose—body hanging head down, tail cocked

over back, neck pouches inflated like oranges, long black neck tufts projected beyond the yellow pouches. Joyful moment to actually see them in the flesh! Nondescript calls, strange eackles, together with muffled booming that sounded little louder than it did a mile across the farms, came from the cock strutting back and forth across the hilltop. The female, looking in the distance like an ordinary hen, shadowed the background, giving point to the dramatic performance and the conduct of the two cocks, for a second had come up over the hill and the two flew at each other, hopping up into the air—daneing?—in their exeitement.

On another knoll a third cock appeared, and strutted around booming and crowing so ostentatiously, so compellingly, that we could but discover the cause—a demure, indifferent hen picking around in the corner of the field below. Though we saw but five birds, the farmer who owned the hill told us that there were as many as a dozen that frequented it.

Ten days later when driving with a farmer in North Dakota—driving in the free western way over fields pitted with badger holes one moment and through silver-leaf bushes up to the horse's head the next—a Prairie Hen sprang up from before the horse's feet and with white outer tail feathers conspicuous sailed low over the grass for a few yards, then lit and ran with dragging wings and vanished. We got out and hunted around till we flushed her from some low bushes, when she flew with a *kuk-kuk-kuk-kuk-kuk-kuk-kuk*. The farmer going back to the spot from which she had first risen called me, for shrill piping voices were coming from invisible chicks in the grass. At the alarming sound of human voices, however, the well-trained brood fell silent and we had to leave them undiscovered.

After that most of the "Prairie Chickens" I saw in North Dakota were Sharp-tailed Grouse! When the big birds whirr up from under your feet, the projecting tail feathers are a great help in identification and might well deter the broods from following after strange mothers, or so it seemed when a parent of each species flew up beside our road, one of them trailing a large family of young.

I had several interesting encounters with *Pediceetes*. One day, when impelled to answer the call of the prairie in spite of the heat that was rousing sore complaints at the farm, I headed for a small clump of cottonwoods that suggested good nesting sites. The three farm dogs reached the trees before me flushing a grouse with pointed tail which flew with beat and soar, several beats and a soar, uttering a low guttural *cluck-uk-uk-uk-ak*. As I stepped from the hot sun into the shade of the cottonwood thicket, the little trees rustled hard with the prairie wind, fanning out coolness, and the dogs made a bolt for the inside of the clump where they lay with tongues out and sides beating. The old Grouse had shown excellent judgment on a hot summer day.

A few mornings later (July 3), the farmer came in and asked if I wanted to see some Prairie Chickens, that being the general term for the two forms of grouse. He had seen an old hen and her brood in the potato patch. As we walked slowly down between the rows of potatoes, small yellowish brown chicks which looked like young turkeys, one with a suggestion of crest, flew from almost under our feet. Farther on, the mother started out from cover and crouching over like a hunter 'making a sneak', ran with swinging gait down the furrows. When pressed she flew at a wide angle from the young, though all headed for the strip of woods at the foot of the hill.

At this point the farmer returned to the house, but I walked slowly and

quietly down the potato patch toward the woods in which I supposed the old grouse was hiding. Near the foot of the patch, on a mowed strip between it and the woods, to my surprise a pointed head, and long neck, and then a mottled body appeared. Had the old grouse seen the retreating farmer and failing to discriminate between one and two, inferred that the coast was clear and come out of the woods to gather her brood? On discovering me she made a curved flight, with pointed tail showing, swinging around me into the woods to which she was followed by one of her young. After an interval during which I sat silently in the shadow of the woods the old grouse flew back across the width of the field to the place from which we had first flushed her and where she had probably been engaged in the useful occupation of eating potato-bugs.

The young were calling in the woods behind me, and before long, bursting out over my head, a little yellowish brown form crossed over to the potato patch in the direction the mother had taken. But its short wings were unequal to her long flight and it soon soared down, though after a rest it again started in her direction. A second young one essayed to follow, but too timid, circled back to cover once more. Small voices came from the woods behind and on both sides of me growing closer till a soft little whistle—*whce-aye-ee*—made me look down. About a yard away, on the edge of the broken ground stood a yellowish nestling streaked and spotted with black and white, wisps of down blowing about its head and body. Stretching its long neck till it looked as if on tip-toe it gazed in the direction its mother and brother had taken. Its bit of a tail jerked as it whistled, its bill opening for the first syllable—*whce*—and staying open for the *aye-ee*.

Three more young flew out of the woods while I waited, but dropped into the corn field beside the potato patch. One of them ran timorously up between two rows, squatting down under some friendly corn blades; but the cover was so thin that the little fellow's dark neck line showed. Kingbirds, gulls, a Sparrow Hawk, and a Marsh Hawk flew over. A Richardson ground squirrel that ventured out wisely scooted across the field and then sat up picket-pin style looking for danger. No one knew who might come next. So the well-trained little grouse lay close.

Other families of young were soon abroad in the land. When driving between Red Willow and Devil's Lake on July 8 and 9, we scared up a number of quarter-grown broods, pretty little striped stubby-tailed chicks. Sometimes the mother burst out of cover, ostentatiously soaring off in the opposite direction from her young; once she ran enticingly along the road ahead of us, and once walked slowly and deliberately over the winrows of hay by the road, her sharp tail pointed up, while at least eleven young scattered out in different directions.

Another day not far from Red Willow Lake, Mr. Bailey in driving over the prairie came onto an old grouse with a large family of little chicks. While the chicks with a scurry melted into the grass, the old grouse began a painful fluttering and flopping and tumbling on the ground just in front of the horses. The shepherd dog at the rear of the wagon bolted past the brood and thought that he almost caught the old bird who flopped and sputtered just beyond his nose till he was well in for the chase, when she led him on to the top of the farthest ridge, nearly a mile away. She then soared off in a wide circle and later, as the dog, panting and exhausted, caught up with the wagon a quarter of a mile from where he had started, the old grouse circled back to her hiding brood.

In summer the grouse have abundant food, and in winter they are said to

gather along the woods and thickets of wild rose, silverberry, and thornapple, to eat the haws and berries. The straw stacks left unburned in the wheat fields may also afford them some food, but in severe weather the need of additional supplies may well be felt. This need was recognized one winter by a farmer who, though having the reputation of being "the meanest man in the county," was met by a neighbor carrying a load of wheat to a self-feeding granary in the woods because he "could sleep better if he knew the chickens had something to eat!" As the winter proved the worst in years he had good reason to rest better for his Samaritan act. Since then, we were told, the postal authorities have authorized the rural route mail-carriers to distribute corn supplied to them whether by individuals or the Fish and Game Commission of the state.

Another characteristic bird of the prairies of which I saw all too little was the Upland Plover. One parent whom we passed when driving stood high in the prairie grass looking at us while just the head of its young one showed above the grass. Another plover surprised me, standing not on the ground but on top of a telephone pole, its round head and trim body mounted high on its long legs—true wader of meadows! On another day a guarding parent appeared in the blue sky ahead of us as we drove slowly up a long slope. Down it came toward us, its long wings on the down stroke giving it a curious wish-bone figure. Down it came, though not concerned with us as it proved, for, passing by, it took a wide sky circle on fluttering wings—while a Marsh Hawk heedless of its secret went serenely on its way looking for meadow mice. When the plover's liquid note is heard or the big birds come out of the sky to drop to earth, they give a rare thrill of pleasure. How much more were one fortunate enough to hear all their notes and watch their fascinating maneuvers. Lovely birds! They go well with the big clean prairie—dividing their time between earth and sky.

Among the kindred spirits of the plains are the Longspurs, noted for their ecstatic flight song, birds that I had looked forward most eagerly to seeing in North Dakota. But here again I was sorely disappointed for I reached only the eastern edge of their present range. The few Chestnut-collars that I saw were in the old level valley of the Sheyenne River, as were most of the Horned Larks seen during the summer. The Longspurs were no disappointment when found, striking birds perching on fences, showing their black chests, running along the road ahead of the horses showing their chestnut napes, or best of all springing up from the grass into the air to sing on fluttering wings their bright charming song suggestive of the jubulations of the Bobolink. How it made you want to stay and watch them! Longspurs and Lark Buntings! Lucky the ornithologist who can visit their breeding grounds. The Longspurs, like the Burrowing Owl, have been driven out by the breaking of the prairie, it is said, which would explain their absence in the wheat belt where I spent the summer; for wheat and flax fields have restricted the prairie mainly to a few hillsides and grassed-over sloughs.

In these scattered prairie islands the Bobolinks still find choice nesting grounds, spots of peculiar interest if you are new to prairies. From the top of one of the low swells you look down on great stretches of bluish green wheat with only round sunken islets of waving prairie grass. The unheaded wheat stands immobile on its sturdy stalks, but the long slender-stemmed prairie grass bows with every breath of the breeze—wavelets chase each other over the surface—and if you walk through the slough the sensitive grass sways and

waves and bows about you, the sheen of the sun on its bent stems. Then there are the prairie flowers on the hill-sides! Black-eyed susans, purple cone flowers, a variety of locos hiding their poison under soft pinks and lavenders, slender stems hung with drooping blue bells, patches of white anemones, and best of all, the beautiful red prairie lily, prairie cousin of the tiger lily. In these wild gardens Robert o' Lincoln raises his brood. But he must be about it, for while the grain is still standing the grass ripens and his family must be ready to fly before the mower. For even the sloughs are mowed, as hay is scarce. A singular effect is produced of mowed circles in big wheat fields. Before the mower comes, the Bobolink must put on his brown traveling suit. The last of July no blackcoats were in evidence, but large flocks of brown ones were seen rising from the fields with the unmistakable Bobolink *klink*.

A few black-coated Lark Buntings were seen before moulting time in the Sheyenne River valley, the only ones met with all summer, found the same day and near the same part of the valley as the Longspurs. Rare birds on the eastern edge of their range that, like the low forms of sagebrush in the vanguard, fill the mind with rich western memories. Calamospiza had been in my mind all day, and as we drove along near nightfall we suddenly came to the little band of four. Never had Buntings looked so handsome, their coats never so jet black, their wing-patches never so snowy. Happy moment! Well may it be remembered with all its setting; for that was a worthy one, the slanting sunset light vivifying the green of the combed wheat fields, warming their yellow straw stacks, glowing softly over the smooth dimpled prairie hills in the background.

Sunset comes so late and sunrise so early in that country of high latitudes that the birds must either have abnormally long days, take long noonday naps, or, like Stevenson's children and all good North Dakota farmers, "go to bed by day"; for on the longest June days the sunset glow lasted till ten o'clock and it was daylight again between three and four, the birds beginning to sing as promptly as if it were time to get up. Owls and Nighthawks might well have to hunt by day! The few Nighthawks I saw in the day time were perching on fence posts or telegraph poles from which it was easy to make aerial sallies.

Besides these more notable birds of the open grassland, there were the minor songsters of the prairie. The humble voices of the Savannah and Grasshopper sparrows often rose from the weeds and fences as we passed, and the thin tinkle of the Horned Lark was also sometimes heard from the broken ground. Minor songsters, surely, but even philosophers sometimes find it hard to make such a cheerful noise in the world.

Kingbirds undeniably come in the category of minor songsters, but their cheerful noise is often vituperative. Be this as it may, as you drive across the prairie, they—and there are two forms of them, the Eastern and the Arkansas—often possess the fences, an Eastern on one length of wire perhaps, and an Arkansas on the next; and both birds frequent not only the fences but the shore-line, the Eastern bird apparently catching insects started up by the incoming wavelets.

While the Savannah, and Grasshopper sparrows, Horned Larks, and Kingbirds are all minor songsters, the Vesper Sparrow and the Western Meadowlark—two of the most familiar birds of the prairie—come in an entirely different musical category. The two, unlike as they are, may be classed together, for the quality of the Vesper's song at its best allies it to that of the Meadow-

lark whose pure minor notes have the sweetness, the serenity, and uplift that belong to the big clean prairie open under the sky. Beautiful prairies! How they fill the imagination and free the mind of the escaped city dweller! Miles and miles of prairie with hardly a house in sight, unclouded skies, and strong vivifying sunshine tempered by the cool fresh wind from far away!

Washington, D. C., May 23, 1915.

A WALKING EAGLE FROM RANCHO LA BREA

By LOYE HOLMES MILLER

WITH ONE PHOTO BY H. S. SWARTH

TO DISCUSS in a magazine of ornithology an extinct species of bird whose latest known remains are, perhaps a quarter of a million years old may seem a bit of an impropriety—an unwarranted liberty to take with THE CONDOR's pages; yet many have indiscreetly (or politely) enquired from time to time of the progress of work on the Rancho La Brea fossil birds; hence this proffered contribution. The finding of remains of Labrador Duck, Pallas Cormorant, or Great Auk, would furnish a news item which many would read with great interest. An egg of the Great Auk put up at auction among enthusiastic collectors would stimulate an interest easier to imagine than to describe. These birds are extinct. Most ornithologists know, and will know, little of them beyond the fact that they are extinct, yet the very name has a sound that catches the attention. It is hoped that *Morphnus daggetti* may appeal as having at least the distinction of extinction. Really, though, to the enthusiast, there are other reasons why he is of interest.

Among the hundred thousand or more bird bones in the collection made at Rancho La Brea by the Los Angeles Museum of History, Science, and Art, there have been found two specimens which represent a species of eagle of most astonishing character. The part represented is that segment of the posterior limb known to the ornithologist as the tarsus—perhaps the most characteristic bone of the bird's body. This certainly is an eagle's tarsus. It is somewhat less in transverse measurement than is the same bone of the golden eagle (*Aquila*), but in linear dimension it is nothing less than startling. When it is laid alongside of the tarsus of the Great Blue Heron (*Ardea*, see fig. 63) there is seen to be less than a quarter of an inch difference in length between the two bones. An eagle on stilts is the instant impression—an impression not new to one who has seen that South African anomaly, the Secretary Bird (*Serpentarius*), yet an impression that comes as a breath-catching surprise here in the vicinity of Los Angeles.

It was the writer's great pleasure, through courtesy of the New York Zoological Society, to enter the cages at the Bronx and study the live Secretary Bird in its feeding, running, and perching actions. The prehensile function of the foot has been entirely abandoned for the sake of an ambulatory function. The Secretary Bird is indeed a stilt-walker—an eagle without talons. When the long-shanked eagle from the asphalt was first encountered, the questions at once arose: "Is there evidence of degeneracy as an eagle? Was he a walking bird? Does he show kinship with South Africa and her Secretary Bird?"

There certainly is evidence of degeneracy of the eagle-like function of the foot. Let us examine the evidence. The points of attachment of muscles to bones are commonly marked by distinct roughnesses of very definite position. In a foot of great lifting power, the attachment of those muscles which bend the leg at the tarsal joint are relatively far down the shaft of the tarsus, thus affording greater leverage for the lift. In like manner one grasps farther down on the pitchfork handle in lifting a heavier shock of hay. Wading, running, and walking forms of birds employ the opposite method of attachment, sacrificing lifting power to gain distance of stride in the foot. To continue the homely comparison, the hay-maker shifts his hand back toward the end of his fork-handle after the weight has been raised and he wishes to gain distance

for heaving his hay upon the load. *Morphnus daggetti* has similarly shifted his grip on his tarsal lever, or he has accomplished what is in effect the same, by an extreme elongation of the shaft beyond the point of muscle attachment. This great long-shanked eagle has a power arm in his lever no longer than that of the Ferruginous Roughleg (*Archibuteo*), although the resistance arm is almost twice as long as that of the same species. The Caracara (*Polyborus*), who walks as readily as a turkey, has almost exactly the same relative position of its muscle attachment as has this great extinct eagle. The conclusion is unavoidable that the lifting power of the foot was extremely low.

But what of the grasping power of his toes? The three front toes of a bird are attached at the extremity of the tarsus to three articular surfaces known as trochleae. In the powerfully predaceous raptors these trochleae are deeply grooved and are set somewhat obliquely upon the shaft. Evidence of decline of the raptorial habit is seen in *M. daggetti* in the fact that these trochleae are more uniform, less deeply grooved, and are set less obliquely upon the tarsal shaft. This condition is carried to its extreme in the Old World

vultures which are conceded to be degenerate raptors, and is in marked contrast to the conditions in *Aquila* and *Haliaeetus*. The conclusion seems inevitable that this peculiar asphalt species was of more or less ambulatory habits—a bird which had forsaken the more actively predaceous manner of his aquiline ancestry and lengthened out his shanks in much the same way, though perhaps not to the same degree, as has the Roadrunner (*Geococcyx*) forsaken the tree-dwelling life of his cuckoo kindred to put on stilts.

A condensed description of the new species is appended for the more technical student.

Morphnus daggetti, new species; type specimen, no. A-380, Los Angeles Museum of History, Science, and Art; a tarsometatarsus. Assignment of this



Fig. 63. TARSOMETATARSUS OF *Morphnus daggetti* (AT LEFT) AND OF *Ardea herodias*; BOTH ABOUT TWO-THIRDS NATURAL SIZE

species to the genus *Morphnus* instead of to *Geranoaëtus* is based upon differences in the head of the tarsometatarsus. The length of the tendinous bridge is less in *Morphnus*, as is likewise the development of the outer hypotarsal ridge. The difference is constant though slight. The affinities of the fossil specimen as indicated by these characters are with *Morphnus*.

Distinctive characters of the species are: extreme elongation of the tarsal shaft; weakness of the distal trochleae, which are set less obliquely on the shaft and are less grooved; extreme reduction of the ratio of power arm to resistance arm. In *Aquila* this last-named ratio is .303, in *Morphnus guianensis* it is .171, in the fossil species but .125.

Table of measurements in millimeters of *Morphnus daggetti*, tarsometatarsus:

Total length over all	167.0
Transverse diameter of head	20.8
Transverse diameter through trochleae	22.8
Transverse diameter of shaft	9.1
Length of power arm	20.6
Ratio of power to weight arm	.125

The species is named in honor of Mr. F. S. Daggett, through whose kindness the collections at the Museum of History, Science, and Art have been opened to the writer's inspection.

Los Angeles, California, August 1, 1915.

ESTIMATED AVERAGE AGE OF THE HERRING GULL*

By JOHN TREADWELL NICHOLS

INTRODUCTION

AT THE A. O. U. CONGRESS held in Washington in 1914, the writer presented a paper on the proportions of different ages of the Herring Gull, as bearing on the average age which birds of the species reach. The proportion of first year birds was estimated from data gathered by observing gulls from ferry-boats in New York Harbor, supplemented to some extent by observations on Long Island and elsewhere. During the season of 1914-15 more data has been similarly collected, and the results obtained, if not unimpeachable, are believed to be interesting and worthy of publication. They indicate an average age of 16.2 years attained by birds which have reached the second winter, and very high mortality between the first and second winters.

ARGUMENT

In *Science* for October 25, 1912, page 565, is a suggestive article by W. J. Spillman, of Washington, D. C., entitled "A Method of Determining the Average Length of Life of Farm Equipment", in which it is shown that in dealing with a constant population of either inanimate or animate objects, "if we divide the total number of objects of all ages . . . by the average number in their first year the quotient will be the average length of life that those now in their first year will live". By this formula the numbers of first-winter Herring Gulls divided into the total Herring Gull population gives their average length of life. First-year Herring Gulls are dark in plumage, readily separable from second year or

*Read at the A. O. U. Congress, San Francisco, May 18, 1915.

older birds. To get their approximate average length of life, it is then only necessary to make a sufficiently large count of young and old birds, so that the proportion may be approximately correct for the whole Herring Gull population. During the winter of 1913-14 this was attempted. Second-winter Herring Gulls are in an intermediate plumage easy to identify, and, as the length of life before count of the group one is studying has nothing to do with the working of the formula, during the season 1914-15 an attempt was made to determine the proportion of second-winter birds to those of that age or over, from which the length of life of second-year birds could be computed.

The Herring Gulls observed in New York Harbor are a mixed lot representing all ages and plumages. In the fall the first-winter birds are uniformly dark, the second-winter birds much paler, with white rumps, and all others have grey mantles and white tails. The tendency of birds of an age to flock together, sometimes marked on adjacent ocean shores, is not noticeable here.

In the season of 1913-14, 58 counts of the proportion of first-year birds to the total were made. Out of a total of 7794, 1294 were in their first year. Dividing, we get 6.0 for the proportion of total to young. That is, first year birds will live to an average age of 6.0 years.

In the season of 1914-15, 46 counts of the proportion of second-year Herring Gulls to the total (excluding first-winter birds) were made. Out of a total of 3267, 215 were in their second year. Dividing we get 15.2 for the proportion of total to young. That is, second-year birds will live on the average 15.2 years, or to an age of 16.2 years.

It is at once apparent that the mortality between first and second winters is very high, amounting to about 66 percent. It will be noted that the same year's brood was dealt with as second-winter in 1914-15 which was dealt with as first winter in 1913-14.

The personnel of the flocks is constantly changing, as often on one day one sees twice as many as on the day previous, and a bird with peculiar plumage, perhaps some rare species, has often been looked for, but never seen a second time. In estimating proportions the writer has made actual count each day of birds of different plumages, so far as possible (it is not entirely possible) avoiding repetition in a count, and added together the figures obtained on all the days when count was made. Doubtless many individuals were counted on more than one day, and the figures obtained must be too high for the actual number of individuals observed, but this should not affect the proportions. The plumages vary somewhat, but at this season there is seldom hesitation in placing any individual in one of the three categories (first-winter, second-winter, adult). Through the winter young birds become gradually lighter and after about March 1 there is more change. There seems to be much variation in the persistence of the dark plumage in spring, and the percentage of puzzling plumages increases, so that during the second season, 1914-15, no attempt at count after March 1 was made. Chance determinations of plumages were omitted, as of a few birds flashing white in a distant flock which might contain undeterminable young birds,—and thus one probability of error in proportions has been avoided.

CHANCES OF ERROR

The formula followed is true only of fixed populations; if the Herring Gull population is increasing notably the number of young birds will be larger than normal and the determined average age too low. The same is true if the 1913 brood of young was for any reason an abnormally large one.

If the plumages have not been correctly diagnosed the results will be thrown into error. This might be, if some first-year birds wore second-year plumage, which is unlikely, as if so there would be more intermediates between typical first- and second-year plumages in the fall than one actually does find. That some older birds wear second-year plumage, or second-year birds adult plumages seems more probable, but here the error should fall on one side as frequently as on the other and make no difference in the final results.

It is possible that the counts are not sufficiently great to give the true proportions. Larger counts would of course be more reliable; but in the writer's opinion those made are sufficiently large for approximate accuracy.

If the habits of young and old vary so that any age favors the region where the observations were made more than the others, this would result in an erroneous proportion being obtained. Familiarity with the Herring Gull in various parts of its winter range leads the writer to believe that young or old do somewhat favor certain regions, but that the point where the observations were made is not such a region and that the counts are representative.

SUMMARY

In view of the difficulties of successfully estimating the age which a species of bird reaches in nature, an estimate based on the proportion of young to old is of interest. To repeat, such an estimate from two season's observation of the Herring Gull gives average age attained by first-winter birds 6.0 years, second-winter birds 16.2 years, which implies a very heavy mortality between the first and second winters. Very likely the mortality continues heavy for another year or more and the normal age of the species is distinctly greater than the average age reached by second-winter birds, perhaps between 15 and 20 years, but this is mere guess-work.

The writer considers the method here used one of the best, when available for determining age; but results obtained with it by one observer in one locality in so short a time can not be greatly relied upon.

New York City, June 11, 1915.

A LATE NESTING RECORD FOR THE CALIFORNIA WOODPECKER*

By HARRIET WILLIAMS MYERS

FOR TWO seasons, at least, the same hole in a telephone pole that is daily passed by hundreds of street cars and automobiles, has been the home of a pair of California Woodpeckers (*Melanerpes formicivorus bairdi*). There are plenty of oak and other trees nearby, but the birds seem to have a fondness for this pole which is near a group of poles on the corner of Pasadena Avenue and Avenue 62, Los Angeles, only a short distance from the Arroyo Seco. The hole is about thirty feet from the ground and is badly worked and split down. From a small round opening it has become an almost square one nearly twice as large as needed.

While nesting birds have been recorded for every month in the year in California, I had thought July to be the latest for these woodpeckers, and was, therefore, rather surprised to find that this nest-pole contained squealing young on September 11. It was after six o'clock that I passed near the corner on this day

*Read at the A. O. U. Congress, San Francisco, May 18, 1915.

and stopped to watch the birds flying through the air after insects. Sometimes they flew out in big circles, returning, flycatcher-fashion, to the wire from which they started. Sometimes they went straight up into the air and tumbled back, at times catching themselves suddenly in their downward flight, and darting forward. I thought, as I watched them, how remarkably graceful they were for woodpeckers, and how much they foraged like the true flycatchers. It was beginning to get dark and I was passing on when, to my amazement, one of the birds flew to the pole and fed something within. As I listened I knew that my eyes had not deceived me, but that, unusual or not, there were young in that nest.

The next day, from three until four P. M., I watched at the pole and recorded the actions of the birds. I soon noticed that a woodpecker was resting on the wire above the nest, and that two others were busy feeding. This resting bird was a trifle smaller and the black breast-band was more marked with white. In some indescribable way I was impressed with the idea that it was an immature bird. Presently it flew away and I thought no more about its presence until all three came to the wires at once and after two of them had fed and left, this third mysterious bird went into the hole and stayed there.

It was the habit of the adults to fly about in the neighborhood, inspecting the poles, or to fly through the air, for most of their food. Sometimes they were out of sight, but they did not stay long. When a bird came, he, or she, popped into the nest, stayed a minute and came out, sometimes giving the *ja-cob* call, which both used.

After this third woodpecker had gone into the pole-nest, I kept my eyes riveted upon it so as to know how long the bird stayed in there. When the adults came to feed they did not go inside but reached over, fed, and flew away. Three times one of them did this, but the fourth time, when the male came, he stood on one side of the hole and I heard him give low, guttural notes. It seemed quite evident that he was saying: "See here, you young scamp, it is high time that you were coming out of there. Let me get in and attend to your brothers and sisters, as I should." Presently, the truant young, for such he proved to be, appeared in the doorway and, with open mouth, begged for just one bite. "Please don't scold, father dear," I felt sure he was saying, "it was so nice and cozy down there and the children were glad to have me,—really they were."

But the old bird was unrelenting and stayed in his position by the hole until the bird inside, which was undoubtedly a former nestling, came out and flew onto the wire above, when the adult male went within.

Just to prove that he was not all baby, the former nestling turned in and helped feed. Several times he went into the hole and came directly out, and I might have thought that he was in there in hopes of getting fed had I not distinctly seen a big fly in his bill as he entered. Each time as he bobbed into the hole several white bars showed plainly on the underside of the outer tail feathers. It was this marking of a young bird which convinced me that he was a former nestling. In every other respect he resembled a male California Woodpecker. Once more, during my watching, he slipped into the nest, staying eight minutes before they got him out. The first time it had been twenty minutes.

In an hour's watching the birds fed 28 times, the shortest interval being one-half minute, the longest eight. In nine minutes they fed eight times.

On the 15th of the month, when I believe the young must have been about ten days old, they were fed 24 times in 58 minutes. The food given them now was mostly acorns which the adults took from the nearby poles, sometimes digging them out in pieces, and sometimes taking them to the top of a flat pole

where they pounded away for some minutes before coming to the nest with their bills stuffed full of the white bits. From this time until the young left the nest they were fed mostly on these acorns.

Sometimes the birds flew to an oak tree from which they took the green acorns. These were brought to the poles and, I believe, stored away in the holes left vacant by the taking of the old acorns. However I have no proof that green nuts were not fed. It only seemed as if the birds were taking the green ones to the poles rather than directly to the young, and since the dried ones would be easier cracked, it is reasonable to believe they were the ones the birds favored for food purposes. Perhaps green acorns are as indigestible for baby birds as green apples are for baby boys. Who knows!

On the twentieth of the month I was extremely interested to see the male eating black scale from a pepper-tree that grew about a block from the nest.

At this time one large young was reaching far out of the hole and I was told by a neighbor that two of the nestlings were found at the foot of the pole. While it seemed hardly credible that two of them should have been pushed out, there proved to be only one that left the nest, which was either late on the 25th, or early on the 26th of September, fourteen or fifteen days after I discovered them.

About six o'clock of the 26th I found the young bird flying, in rather an uncertain way, from pole to pole, where he hopped about and took food which the adults brought him. There were two or three white bars on the black outer tail-feathers, and a patch below the red crown was gray.

It would seem that this late nesting of the California Woodpecker is not so unusual as we may have believed; for on the 19th of October I found another pole, two blocks farther down this busy thoroughfare, where noisy young were being fed. One was leaning well out of the nest. As in the other case, nuts were being fed; but once I saw one of the adults fly down through the air nearly to the ground and come back with a large, long-legged insect in its bill, proving that the diet was not exclusively of acorns.

Los Angeles, California, April 6, 1915.

DESCRIPTION OF A NEW RACE OF SAVANNAH SPARROW AND SUGGESTIONS ON SOME CALIFORNIA BIRDS

By LOUIS B. BISHOP, M. D.

IN STUDYING a collection, one sometimes finds birds that show an extension of range, or seem worth reporting from a paucity of records of their presence in the place where these were taken, revises his previous opinion in the light of more material, or reaches conclusions in harmony with, or in opposition to, others who have studied the same species. These are my excuses for this paper. For assistance my thanks are due to Dr. Dwight, Mr. Oberholser and Mr. Porter. Most of the birds recorded were collected for me by the late Mr. Marsden.

***Fratercula corniculata*.** The Horned Puffin recorded in the obituary of Mr. Marsden as collected at Pacific Grove on February 17, 1914, was a female in winter plumage including the bill. It is now no. 26172 of my collection.

***Larus kumlieni* (?)**. A young female gull (no. 23689), collected at Pacific Grove on January 4, 1912, by Mr. Marsden, has been compared very carefully more than once by Dr. Dwight and myself with the gulls in the collection of the

American Museum of Natural History, his collection and my own, and especially with the bird on which his description of the young of the Kumlien Gull was based; also by Mr. Louis H. Porter and myself with the young bird reported in *The Auk*, xxiii, p. 37. The result has been always the same, the only noticeable difference between the Pacific Grove bird and the two Kumlien's Gulls from the east being that the primaries of the former are a clearer, somewhat darker, gray, as they are much less worn and faded, and that it has acquired many feathers of the pale pearl-gray mantle of the adult. It is a smaller bird than any specimen of *Larus glaucescens* I have seen, especially in bill, tarsi and toes, and the mantle is paler, the shade of *Larus kumlieni*. Little is known about this species, which was at first confused with *Larus glaucescens*, but it certainly seems improbable that it should wander to California, as it has so far been recorded only from the North Atlantic. Mr. Oberholser, chiefly for this reason, considers my bird only an abnormal Glaucous-winged Gull with an unusually small bill.

Marila collaris. Four females: 1, Pacific Grove, December 21, 1911; 3, Colusa, (1) December 5, 1913, and (2) January 5, 1914, H. W. M. (nos. 23719, 25995-7).

Arenaria interpres interpres. The young female Turnstone (no. 11717) taken on September 8, 1904, at Pacific Beach, and recorded in THE CONDOR, vii, p. 141, as this race, has much darker upperparts and breast, and less rusty on wing-coverts, than any of a series of 10 young female *A. i. morinella* taken on the Atlantic coast in August and September. In 5 females taken in Florida in December the rusty has disappeared by fading and attrition, but the upperparts are even paler than in the early fall birds and very much paler than the Pacific Beach bird. The latter closely resembles young *A. i. interpres* from Oceanica in the collection of Dr. Dwight taken in November, and agrees with them in having the tips of the rectrices white and not pale rusty as in *A. i. morinella*.

Otocoris alpestris merrilli. Eight males and five females, Dos Palos, Merced County, November 2-13, 1908, H. W. M. (nos. 19615-27).

Otocoris alpestris pallida. A male Horned Lark from Palm Springs, February 16, 1913, A. Brooks (no. 26696), is called *O. a. ammophila* by Mr. Oberholser, and a female taken at Redlands on February 13, 1903, H. W. M. (no. 8396), *O. a. leucansiptila*. These birds are noticeably different, but both are grouped under *O. a. pallida* in the A. O. U. *Cheek-List*, and I have seen no birds from the type locality of the last.

Corvus corax clarionensis. Four Ravens collected on San Clemente Island by Mr. C. B. Linton, young male, October 8, adult females, January 24 and March 5, and young female, October 8, 1907 (nos. 18515-8), differ fully as much in wing, tail and length and depth of bill from five Ravens from Humboldt County, California, Montana, North Dakota and Colorado, as the latter do from five from Alaska and Greenland, while in the ratio between length and depth of bill the San Clemente birds are more like Ravens from the far north than those from other parts of the northern United States. This would indicate that if *C. c. principalis* is recognized, *C. e. clarionensis* should be; but, as none of my skins of *C. e. sinuatus* are from anywhere near the type locality, it may be that they are not fair representatives of that race, but intermediates with *C. e. principalis*.

Passerculus sandwichensis nevadensis. Three Savannah Sparrows from Trinidad, Humboldt County, California, taken August 21, 26, and 31, 1909 (nos. 20699-701), Mr. Oberholser refers to *nevadensis*; and four from Witch Creek, male, November 21, 1904 (no. 12121), and three females, December 11, 1903 (no. 10215), October 31, 1904 (no. 12120), and January 25, 1906 (no. 16296), and

two females from Dos Palos, Merced County, November 2 and 9, 1908 (nos. 19628-9), are very similar. All were collected by Mr. Marsden. These birds do not have as broad black centers to the feathers of the upperparts, and the hazel borders are wider than in females from Tucson, Arizona, November 10, 1905, H. W. M. (no. 14757) and Gallatin County, Montana, May 20, 1907, A. A. Saunders (no. 20578), but in general pallor and lack of hazel and buff in the plumage are nearer to them than to *alaudinus* from the Pacific Coast. If, as seems necessary, these birds are called *nevadensis*, the Savannah Sparrows breeding in North Dakota and wintering in Texas and Coahuila, Mexico, must also be referred to this subspecies. The Savannah Sparrows breeding in Saskatchewan appear to be intergrades with *alaudinus*, though somewhat nearer *nevadensis*, while the few skins I have from Teton County, Montana, and Okanagan, British Columbia, are plainly *alaudinus*.

***Passerculus sandwichensis bryanti*.** A female collected at San Bruno, San Mateo County, May 1, 1904, H. H. Bailey (no. 17420), has a bill as long and slender as average females of the Belding Sparrow from San Diego County; and a male, Witch Creek, San Diego County, February 12, 1904 (no. 10864), and a female, Long Beach, Los Angeles County, February 21, 1896, F. S. Daggett (no. 21653), I cannot help referring to *bryanti*, although the former is on back intermediate with *beldingi*. It seems to me that the true relation between these birds would be better expressed by the trinomial, *Passerculus sandwichensis beldingi*.

***Passerculus sandwichensis brooksi*.** Dwarf Savannah Sparrow. New subspecies.

Type.—♂ adult, no. 12975, collection of Louis B. Bishop; Chilliwack, British Columbia, April 4, 1905; Allan Brooks.

Subspecific Characters.—Nearest in size to *P. s. bryanti*, but with slightly longer wing and tail, slightly smaller bill, and shorter tarsus; much paler in coloring, with the dark central stripes much narrower both above and below, and the rusty paler. Smaller, but with relatively longer bill than *P. s. alaudinus* and *P. s. nevadensis*; much paler and with less rusty in plumage of upper parts than *P. s. alaudinus*; closely resembling *P. s. nevadensis* in color, but slightly darker and more brownish above, with the supra-loral stripe broader and richer, and with the auricular region, nape and sides of neck washed with buff, these differences showing best in birds in fresh winter plumage.

Range.—Resident in southwestern British Columbia near the coast; some migrating to Humboldt Bay, California, in August.

In May, 1905, Mr. Allan Brooks, while sending me some birds from Sumas, B. C., called my attention to the fact that two forms of Savannah Sparrow occurred there,—a small bird, “the resident form, which breeds on the coast only (west of the Cascades), generally on tidal flats and never at high elevations”, and a larger bird, which appeared only in the migrations, breeding “in the interior and northward”. He stated also that the migratory form did not arrive in spring until three weeks or a month after the breeding race and that the latter sometimes wintered. At the time this race, though evidently distinct from the *alaudinus* occurring in transit, seemed too close to the bird breeding in North Dakota to warrant description; but some very small Savannah Sparrows, collected at Trinidad, Humboldt County, California, in August, 1909, by Mr. Marsden, were evidently this small Sumas bird and evidently not the North Dakota form. I have named it after Mr. Brooks, its discoverer, as a slight tribute to his worth as an ornithologist, artist, and brave defender of his country.

MEASUREMENTS, IN MILLIMETERS, OF SAVANNAH SPARROWS

Collection of L. B. Bishop	Locality	Date		Wing	Tail	Exposed culmen	Bill from nostril	Depth of bill at base	Tarsus
<i>Passerculus sandwichensis brooksi</i>									
						Males			
12972	Chilliwack, B. C.	March 30, 1905		67.4	46.9	9.6	7.5	5.6	20
12973	" "	" " "		65.8	47	10	7.5	5.6	20.5
12974	" "	April 4, "		66.8	46.8	10	7.3	6	19.5
12975*	" "	" " "		66	45.9	10	7.7	5.7	20
12976	Sumas "	" 28, "		68	46.3	10.8	7.9	6	20.5
20692	Trinidad, Calif.	August 19, 1909		67.3	47	9.5	6.9	6	20
		Average		66.9	46.6	10	7.5	5.8	20.1
<i>Passerculus sandwichensis bryanti</i>									
						Males			
8738	Millbrae, Calif.	May 26, 1903		65	45.5	11	9.4	6	21.6
8739	" "	" " "		63	44.5	11.2	8	6	22.3
22048	Redwood City "	April 27, 1910		67.3	48	10.4	8	6	22.2
20374	Suisun, "	May 21, 1909		66.7	46.5	11.4	8.5	6	21
20375	" "	" 24, "		64.5	45.4	10.3	8	5.8	21.6
20683	Trinidad, "	June 8, "		64.8	45	11	7.8	5.5	22.5
20685	" "	" 22, "		68	47.3	11.4	8.8	5.7	22.8
20690	" "	July 29, "		69.2	46.3	11.4	7.9	6.2	21.4
		Average		66.1	46.1	11	8.3	5.9	21.9
<i>Passerculus sandwichensis alaudinus</i>									
						Males			
12245	Pacific Beach, Calif.	January 11, 1905		70.8	47	9.2	7.2	5.4	20.8
18756	Red Bluff, "	April 8, 1908		70.7	50.6	10.2	8	6.3	21.3
18757	" " "	" 11, "		74	50.5	10	7.9	6	22.2
24210	Okanagan, B. C.	" 30, 1912		70.6	50	9.3	7.1	5.8	21
4151	White Pass, "	June 4, 1899		73.2	53.3	9.5	7.9	5.7	20.3
4216	Log Cabin, "	" 20, "		72	49	10.3	7.9	5.1	21.7
4473	Circle City, Alaska	August 19, "		73.5	54	9.4	7.3	5.3	21.3
4494	Yukon Mouth, "	" 27, "		72.8	56.7	10.4	8	5.6	20.6
		Average		72.8	51.4	9.8	7.7	5.6	21.2
<i>Passerculus sandwichensis nevadensis</i>									
						Males			
12121	Witch Creek, Calif.	November 21, 1904		72	51.2	10	8	6.2	21.3
19936	Rockport, Texas	February 2, 1909		69.8	47.6	9.7	7.5	5.5	21.4
19939	" " "	" " "		70	47.9	10.1	7.4	6	20
1527	Towner Co., N. Dak.	May 1, 1895		73.2	52	10	7.9	6.4	19.8
7434	Nelson " "	June 12, 1902		70	50.6	9.6	7.3	6.2	21.2
13296	Benson " "	July 20, 1905		71	47	10.6	8	6	20.3
15673	Maple Creek, Sask.	June 9, 1906		67.4	51.2	10	8	5.6	20.5
15780	" " "	" 25, "		70	51.1	10	7.6	5.6	20
		Average		70.4	49.9	10	7.7	5.9	20.6
<i>Passerculus sandwichensis brooksi</i>									
						Females			
12977	Sumas, B. C.	April 28, 1905		66.1	47	10.2	7.8	5.7	21.5
12978	" "	May 8, "		64.6	44.2	10.2	7.5	5.8	19.5
12979	" "	" 4, "		62.3	43.5	9.5	7.3	5.2	20
12980	" "	" " "		66.6	47.6	9.6	7.2	5.5	21
20698	Trinidad, Calif.	August 19, 1909		64.2	44.7	10.2	7.5	6	20
		Average		64.8	45.4	9.9	7.5	5.6	20.4

*Type.

Zonotrichia leucophrys gambeli. The sparrow recorded from Redlands as *Z. l. nuttalli* in THE CONDOR, VII, p. 142, I believe, after comparison with a larger series of fall birds from the normal range of that subspecies, to be nearer *Z. l. gambeli*.

Passerella iliaca unalaschensis. Two male Fox Sparrows taken at Santa

Cruz, February 2, 1895, G. F. Breninger (no. 26701), and Sherwood, Mendocino County, September 28, 1908, H. W. Marsden (no. 19524), and three females, Grafton, Yolo County, September 27, 1910, H. W. M. (no. 22989), Paradise, Butte County, March 10, 1906, C. W. Bowman (no. 17980), and Santa Cruz County, January 15, 1895, G. F. Breninger (no. 26702), are referred to this race by Mr. Oberholser; and a male and female collected at Witch Creek, January 16, and November 16, 1906 (nos. 16325, 17256), by Mr. Marsden seem to me indistinguishable.

***Passerella iliaca insularis*.** A male taken at Nicasio, February 18, 1911 (no. 25302), and a female at Felton, Santa Cruz County, January 12, 1892, G. B. Badger (no. 25303), Mr. Oberholser calls this subspecies; and to it I refer also two males, Pescadero, San Mateo County, October 26, 1910 (no. 23006), and Sherwood, Mendocino County, October 13, 1908 (no. 19525), collected by Mr. Marsden.

***Zamelodia melanocephala capitalis*.** In my series of breeding male Black-headed Grosbeaks I find that 3 from Pacheco, Chihuahua, Mexico, and 2 from the Huachuca Mountains (Palmerlee, Cochise County), Arizona, have much larger bills than 10 from different parts of California, between Humboldt and San Diego counties. In the former the exposed culmen averages 19.9 millimeters, with extremes of 19.2 and 20.5, and the depth of bill at base 15.5, with extremes of 15.2 and 15.8; in the latter these measurements are 17, with extremes of 16 and 18.3, and 14.2, with extremes of 13.5 and 15.2. In addition the Chihuahua and Huachuca Mountain birds have the heads more solidly black. A breeding male from Walsh, Alberta, with bill of 17.6 by 14.8, one from Newcastle, Colorado, measuring 17 by 15.2, and a probably migrating male from Tucson, Arizona (May 6, 1907), with bill of 16.1 by 13.1 agree both in size of bill and color of head with California birds and not with the larger bird ascribed by Ridgway to the Rocky Mountains.

***Guiraca caerulea salicarius*.** My few Blue Grosbeaks from California, 3 males and 1 female from Redlands, have the small bill which Ridgway first noticed was characteristic of California birds. This difference seems to me of fully as much value as the different shade of blue and slightly larger size by which *lazula* differs from *caerulea*.

***Lanius borealis invictus*.** A comparison of 26 Northern Shrikes in my collection from the Magdalen Islands, Connecticut, New York, North Carolina and Ontario, with 17 from British Columbia, Montana, North Dakota and Colorado shows that the western birds in the same stage of plumage have the upper parts a paler shade of gray, less vermiculation on the breast, with the white areas of wings, tail, rump and scapulars larger, as claimed for this race.

A PARTIAL LIST OF THE SUMMER RESIDENT LAND BIRDS OF MONTEREY COUNTY, CALIFORNIA

By J. R. PEMBERTON and H. W. CARRIGER

WITH MAP AND FIVE PHOTOS

IN GLANCING over the many volumes of THE CONDOR one can not help but be struck with the fact that Monterey County has been sadly neglected by bird students. There have been published in our magazine just two general articles on the birds of this region and two small notices in the field-and-study de-

partment relating to the occurrences of two interesting species. While other counties of this state have been exceedingly popular with ornithologists, and the avifauna in most cases well written up, this county has scarcely been touched. And furthermore it is one of the most accessible of the coastal counties and a great deal more so than some of the Sierran divisions. And further than this it is one of the most interesting of all the coastal counties in the matter of its bird-life.

H. O. Jenkins in his paper in *THE CONDOR*, vol. VIII, pages 122-130, pointed out one very important fact regarding the country, as follows: "The region traversed was particularly interesting in that it was found to be the southern limit of the Humid Coast Belt of California. Several northern plants and animals find their southern limits in this place and some northern forms intergrade through this region with closely allied southern forms." This of course pertains only to that part of the county lying along the coast and more properly within the Transition zone, not to the flora and fauna of the Sonoran zones which lie within the county.

The basis of the present paper consists of field notes and specimens collected during two trips made by Mr. Pemberton. The first trip was made by Mr. Pemberton in company with M. P. Anderson between December 20, 1903, and January 6, 1904, and involved an excursion from Monterey southward along the coast to Posts and return. A fairly representative collection of the winter birds and mammals was made on this trip, and some 70 species of birds were noted. The second trip was made in the summer of 1909 between the dates May 15 and June 6, and the itinerary took the party from Kings City in the eastern part of the county westward to the coast in the vicinity of Lucia, then northward along the coast to near Posts and a return to Kings City to the north of the route followed in the first part of the journey. The party on this trip consisted of H. W. Carriger, G. A. Macready, Dr. J. P. Smith and J. R. Pemberton. Carriger and Pemberton were collecting birds, while Macready studied geology and Dr. Smith caught trout. Just in passing it may be stated that trout fishing in this region is of a superfine quality, there being many many more fish than there are fishermen, the reverse being the case in many parts of the state.

On this second trip a rather complete list of the land birds of the Transition and Upper Sonoran zones was made, and from this list the present paper has been written.

Monterey county, lying about the middle of the state and directly on the Pacific coast, is about 100 miles long with an average width of about 30 miles. The coastal third consists of a lofty range of mountains dropping directly into the sea, and it is here that climatic conditions of the moist, coastal zone of the more northern parts of the state reach their southern limit. South of this region the coastal zone lies in the San Diegan faunal area, the flora and fauna being very different. Jenkins has well shown the character of the coastal belt of Monterey County and given a list of the plants of the different vertical zones along the seacoast. Suffice it to say that this coastal part of the county lies in the Transition zone.

The eastern side of the county consists of a low, rolling, rather bare range of hills, broken about the middle of the county by a wide valley, a part of the central Salinas Valley.

In the center of the county lies another range of mountains parallel to the eastern and western ranges and more or less connected to the western range in the center of the county where the mountains are the highest. It is in this range

that the highest peak of the county, and one of the most lofty of the coast ranges, lies. This is Santa Lucia peak, 5,967 feet in elevation. While lying some 12 miles from the coast, it is included in the Transition zone. The peak is well forested with several species of pines, and is the home of numerous birds of the Transition zone.

The greater part of the county lies in the Upper Sonoran zone and consists of the inter-mountain valleys and the greater part of the central and eastern ranges. The flora consists principally of the oaks, yuccas, willows, sycamores, berries, lupines, and various plants typical of the chaparral areas of the coast ranges.

In the central valley, along the Salinas River, conditions are such that the flora and fauna belong to the Lower Sonoran zone. The zone is narrow and re-

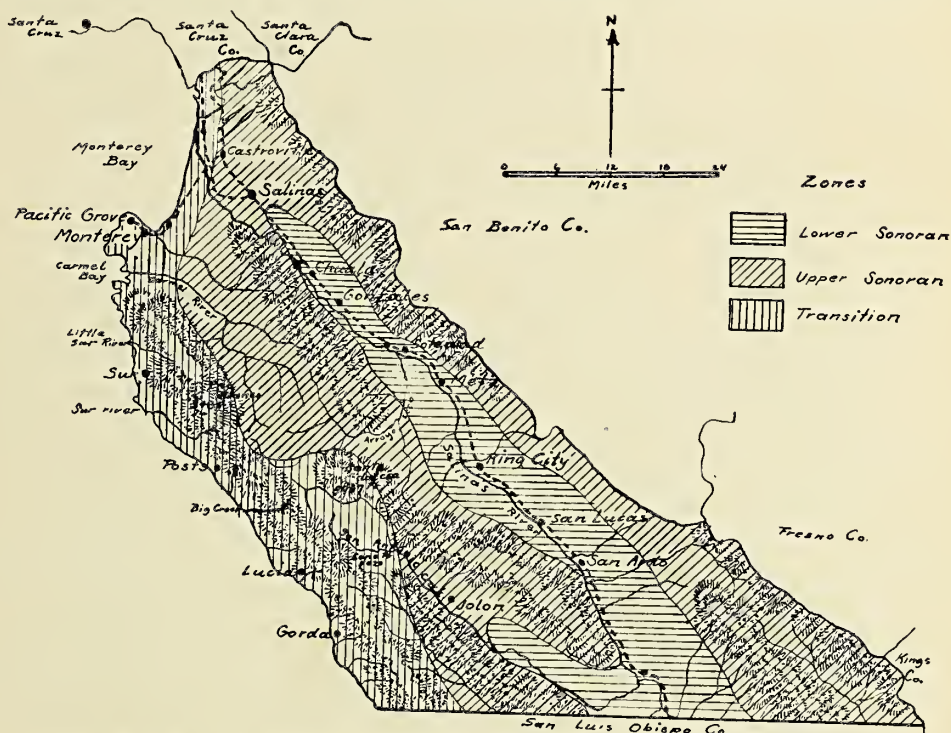


Fig. 64. MAP OF MONTEREY COUNTY, CALIFORNIA, SHOWING THE LIFE ZONES

stricted to the immediate valley. The fauna was not studied by our party in sufficient detail to warrant giving a list of the species known to be typical of this zone.

Thus in general it may be seen that this county is extremely varied in its composition and that there would naturally be a large avifauna within its confines. The map accompanying this paper gives an idea of distribution of the mountains and valleys and of the life zones. The photos show some of the characteristics of each of these zones and it is to be hoped that the following list of the summer residents of the county may lead some one to become interested in the county and after a few trips be able to give us a more complete list of all the interesting species of birds found throughout the year. Dr. J. Grinnell in his paper in *THE CONDOR*, vol. iv, pp. 125-128, has given a delightful description

of the general conditions to be found there in summertime, and his list of species shows what may be expected should anyone make a thorough study.

Before giving the general list of birds noted, the following two lists will show in general what the typical species of the zones are.

SOME UPPER SONORAN SPECIES; LAND BIRDS ONLY

Roadrunner	Bi-colored Redwing
Burrowing Owl	Western Meadowlark
Dusky Poor-will	Willow Goldfinch
California Thrasher	Green-backed Goldfinch
Phainopepla	California Linnet
California Shrike	Black-chinned Sparrow
Yellow-billed Magpie	Bell Sparrow
Long-tailed Chat	California Brown Towhee
Bullock Oriole	

SOME TRANSITION SPECIES; LAND BIRDS ONLY

Mountain Quail	Cassin Vireo
Band-tailed Pigeon	Coast Jay
Pacific Horned Owl	Tawny Creeper
California Pigmy Owl	Audubon Warbler
Cabanis Woodpecker	Black-throated Gray Warbler
Olive-sided Flycatcher	Western Tanager
Monterey Hermit Thrush	Pine Siskin
American Dipper	Point Pinos Junco
Western Bluebird	

Gymnogyps californianus. California Condor. On May 27 Carriger saw a single bird sail majestically over our camp on Big Creek and disappear into the high mountains to the east. Mr. Gamboa, a cattle rancher, stated that a few years ago the birds were fairly common in the summer and usually left in the winter. In 1910 he counted fifteen around a dead cow. Usually in evidence during each month of the year and certainly nest in the county. Mr. Gamboa said that the ranchers do not persecute the birds when seen about a dead cow as they know that they are purely scavengers.

Cathartes aura septentrionalis. Turkey Vulture. Buzzards were commonly seen over the entire territory covered and were especially numerous in the oak-covered valley northwest of Jolon. According to the Indians and older Spaniards who still live in the mountains these birds nest commonly each year in the hills near the coast and not on the eastern side of the range. We found them fairly tame and one photo which we took shows a group of seven resting in a dead tree.

Falco mexicanus. Prairie Falcon. One bird was noted on May 16 near Jolon. This bird was swiftly flying through the oak trees and evidently hunting. Noted also on Santa Lucia peak. A bird was seen on May 27 to sail into a flock of sea gulls flying near the beach and strike one of them to the sand. After performing the trick the bird flew away, evidently not caring to eat his prey. Perhaps he was only practicing.

Falco sparverius sparverius. American Sparrow Hawk. This hawk was not so common as would be expected, only a few being seen. They were all in the Jolon valley and kept away from the pine and redwood zone of the coast ranges. For several days we noted their absence and kept on the lookout for them, expecting that perhaps they were absent in the Transition zone; but on May 19 while climbing Santa Lucia Peak we saw a few birds.

Accipiter velox. Sharp-shinned Hawk. Noted on Santa Lucia Peak and along the seacoast in the vicinity of Big Creek. Not a very common bird.

Accipiter cooperi. Cooper Hawk. One bird seen in the vicinity of Jolon.

Buteo borealis calurus. Western Red-tailed Hawk. Noted throughout the region but in very sparing numbers. Pairs were nesting along the eastern foothills of the coast range in the pines and larger oaks. In the wooded parts of the western slopes a few were seen flying, and perched on tall stumps. This bird gets its usual food in the open country, and it must be difficult for it to get a good meal in the forested region unless it eats grasshoppers.

Aquila chrysaetos. Golden Eagle. Three birds were noted in the Jolon valley.

Haliaeetus leucocephalus leucocephalus. Southern Bald Eagle. This bird was noted on the winter trip near the mouth of the Little Sur River. A pair was seen perched on a dead tree near the ocean. In the summer the bird was not seen; but Mr. Gamboa had killed one a few weeks before we got to the coast. There is no doubt that the bird breeds in this region.

Oreortyx picta plumifera. Mountain Quail. Noted on the upper slopes of Santa Lucia Peak above 4000 feet, at the head of the Jolon valley, and in the coniferous forests near Cone Peak. It was not a common bird, but its loud whistling note was frequently heard. Several times the birds were seen very close by, remaining absolutely motionless while the observer approached to within twenty feet, when they would fly away with a great show of speed.

Lophortyx californica californica. California Quail. A common bird in the Upper Sonoran zone in the Jolon valley and also on the slopes of Santa Lucia Peak where it was noted as high as 4000 feet. It was not seen on the coast side, though on the winter trip it was a common bird all over the coastal hills. It must occur in summer on the



Fig. 65. VALLEY OF UPPER SAN ANTONIO CREEK, MONTEREY COUNTY, CALIFORNIA; HOME OF THE YELLOW-BILLED MAGPIE AND PHAINOPEPLA

western side of the mountains, but our observations would indicate only in very small numbers.

Columba fasciata fasciata. Band-tailed Pigeon. These birds were fairly common on the slopes of Santa Lucia Peak, where they were seen in small bands of about six birds each. Then on the western slopes of the coastal ranges in the groves of oaks and bay trees they were numerous, and nesting the first week of June. Throughout the red-wood zone they were occasionally seen, but always singly. They prefer the eastern side of the mountains evidently.

Zenaidura macroura marginella. Western Mourning Dove. Fairly common in the Upper Sonoran in the Jolon valley, though not seen on the ocean side of the mountains. They were seen in the winter in the vicinity of the Sur River.

Geococcyx californianus. Roadrunner. One of these interesting birds was noted near King City on the return trip. It was in the open valley of the Salinas River in the Lower Sonoran zone. Seen also near Carmel.

Ceryle alcyon. Belted Kingfisher. This is a common bird on the smaller streams

which enter the ocean and also on some of the streams which flow eastward from the coast ranges, notably San Antonio Creek. Practically all of the streams of this county have trout in them, and in general everywhere there are trout the Kingfisher is present also.

Aluco pratincola. Barn Owl. A freshly killed specimen of this bird was seen beside the road on the return trip about half way from Jolon to King City; ranchers near San Antonio Creek described this bird as having nested the year before in one of the old hollow trees near the ranch house.

Otus asio bendirei. California Screech Owl. Noted on the winter trip all along the coast. Several were seen and its cry frequently heard in the night. At Jolon and near the summit of Santa Lucia Peak the cry was also heard. During the summer trip none was actually seen, but there seems to be no doubt as to the cry of this bird, which is different from the other owls, having been the one which was so frequently heard.

Bubo virginianus pacificus. Pacific Horned Owl. This bird was heard hooting nearly everywhere in the mountainous part of the county. During the winter trip it was also heard all along the coast. Once on Big Creek we tried imitating the call and were so successful that a bird came to within a few yards of our camp. Possibly it was a young bird of the year.

Speotyto cunicularia hypogaea. Burrowing Owl. On the winter trip several were noted on the bare hillsides near the ocean north of the Little Sur River. On the summer trip it was only seen in the Upper Sonoran zone in the Jolon valley and was not a common bird at all. Most certainly does not live on the ocean coast south of the Little Sur River.

Glaucidium gnoma californicum. California Pigmy Owl. Specimens were taken on the winter trip in the Sur River canyon. Noted also by Grinnell in summer in the same region. While not seen by the writers on the summer trip, there is no doubt of its occurring in the wooded parts of the coastal mountains.

Phalaenoptilus nuttalli californicus. Dusky Poor-will. Noted and collected by Jenkins on the Little Sur River in June, and noted by Grinnell in July. On our summer trip we did not encounter the bird in the Transition zone, though it was fairly common in the Jolon region. Also on the slopes of Santa Lucia Peak we heard it calling in the night. It is such a secretive bird that it is only by accident that one would be seen in the wooded parts of the coast mountains.

Calypte anna. Anna Hummingbird. This bird was seen everywhere we went; in the dry valley at Jolon, on the summit of Santa Lucia Peak, and in the redwood and yellow pine forests. It seemed to prefer the open sage-covered hillsides where there was much forest nearby. Jenkins speaks of it as being common along the whole route followed by him.

Selasphorus alleni. Allen Hummingbird. Noted by Jenkins on the Little Sur River in June and by Pemberton and Anderson on their winter trip. However, on our summer trip we did not encounter the bird. There is no doubt however that it should be included in the list inasmuch as Jenkins took specimens in June from the Transition zone.

Aeronautes melanoleucus. White-throated Swift. Noted by Pemberton and Anderson in large numbers in the Big Sur River country, and by Jenkins occasionally on Big Creek. We found the bird very numerous across the divide from San Antonio Creek and south of Big Creek. At one place there were hundreds of the birds flying in and out of cavities in a cliff exposed in the forest. These birds were undoubtedly nesting at the time, but the cliff was so inaccessible that we did not investigate any of the cavities. Several birds were shot but all reached their homes before falling so we did not secure any birds. They were not noticed elsewhere on the trip.

Cypseloides niger borealis. Northern Black Swift. Not noted by any of our party, or by Jenkins or Grinnell. R. H. Beck, in CONDOR, vol. I, page 94, notes that the bird was seen at Monterey in June of 1898. The recent operations of Messrs. Vrooman and Dawson along the coast of Santa Cruz County would lead to the belief that the birds are found in similar localities along the Monterey coast. At any rate, on the strength of Mr. Beck's note we will include it in the list of the summer land birds of the county.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Noted fairly commonly during the winter trip; several specimens were taken in the vicinity of the Sur River. Jenkins mentions that it was rarely seen in the redwood canyons though fairly common in the pines of the upper Big Creek. We found the bird on the lower slopes of the moun-

tains in the San Antonio Creek basin; and on the summit of Santa Lucia Peak a specimen was taken in breeding condition. The bird is not common, but may be expected over most of the Transition zone.

Dryobates pubescens turati. Willow Woodpecker. Noted on the lower slopes of Santa Lucia Peak during our summer trip. Pemberton and Anderson noted it as quite a common winter bird in the Big Sur district in December of 1903. Jenkins did not find it along the coast in summer, and it is probable that it remains only in the valley east of the big mountains to breed.

Dryobates nuttalli. Nuttall Woodpecker. Noted only at Jolon in the Upper Sonoran zone. Not a common bird.

Melanerpes formicivorus bairdi. California Woodpecker. A very numerous bird from the oak flats in the Jolon and San Antonio regions to the deep redwood canyons near the coast. Noted by Jenkins as common everywhere. In December we found it very numerous in the Big Sur River district also. The bird likes to perch on the loftiest



Fig. 66. YELLOW PINES IN THE TRANSITION ZONE OF SANTA LUCIA PEAK

twig of a dead redwood tree in the forested part of the ranges. During the summer months there is a terrible pest of large flies, and it is on these flies that this woodpecker feeds to a large extent when in the forested zone.

Colaptes cafer collaris. Red-shafted Flicker. Common bird everywhere, from the tops of the ridges to the sea-shore and from the sea-shore to the interior valley. Also very common in December.

Nuttallornis borealis. Olive-sided Flycatcher. Fairly common bird in the Transition zone. Several were seen building nests, and one set of eggs was taken on May 31 in Big Creek. They prefer the yellow pine forests to the redwoods, and thus they may be found on the upper slopes.

Myiochanes richardsoni richardsoni. Western Wood Pewee. Seen both along the coast in the redwood forests and in the interior valleys on San Antonio Creek.

Empidonax difficilis difficilis. Western Flycatcher. Common bird in the redwood forests and also in the San Antonio Creek and Santa Lucia Peak regions.

Sayornis nigricans. Black Phoebe. Not a very common bird, but noted both along the coast and in the San Antonio Creek country. Prefers open country.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. Noted as an uncommon bird, but widely distributed. One set of eggs taken near the coast from a redwood stump.

Tyrannus verticalis. Western Kingbird. Occurs rather uncommonly over all the region.

Otocoris alpestris actia. California Horned Lark. Jenkins noted this bird as being quite common in the open fields along the entire seacoast, but we did not meet with it. In winter Pemberton and Anderson found it rather common north of the Big Sur River where there are many open fields.

Hylocichla guttata slevini. Monterey Hermit Thrush. This bird was noted only in the deep redwood groves and is either very secretive or uncommon. Grinnell noted the bird in June in the Big Creek country, though Jenkins failed to meet with it.

Hylocichla ustulata ustulata. Russet-backed Thrush. Noted as an uncommon bird in both the San Antonio Creek region and in the redwood belt.

Sialia mexicana occidentalis. Western Bluebird. Common in the San Antonio Creek region, but only noted once on the coast side of the mountains. Jenkins speaks of it as common in the upper Big Creek region, but we failed to find more than one pair of birds. Should be one of the regular summer residents.

Toxostoma redivivum redivivum. California Thrasher. Noted in the dryer parts of the San Antonio Creek valley and on the lower slopes of Santa Lucia Peak. Not noted in the Transition zone excepting in the winter when one bird was seen in the Big Creek valley.

Cinclus mexicanus unicolor. American Dipper. This bird is common along all of the streams which flow from the redwood and pine forests. In all of the canyons on the ocean side and in the upper part of San Antonio Creek the Ouzel was a common bird. Many nests were found containing young birds, as also several unfinished nests. This bird is rather typical of the Transition zone.

Thryomanes bewicki drymoeus. San Joaquin Wren. Fairly common bird over the whole region. A series of these birds is needed to determine the status, as Jenkins' specimens, taken in worn post-nuptial plumage, were with difficulty determined by Grinnell as belonging to this race, and possibly should be placed with the San Diegan form, *Thryomanes bewicki charienturus*. We unfortunately took no specimens.

Troglodytes aedon parkmani. Western House Wren. Common bird everywhere. Also taken in winter at Sur River.

Nannus hiemalis pacificus. Western Winter Wren. Not uncommon in the deep redwood forests near the coast. A nest ready for eggs was found by Carriger on May 26. It was placed at the base of a great redwood tree among the ferns and fallen bark of the tree.

Salpinctes obsoletus obsoletus. Rock Wren. This bird was observed quite commonly in the winter in the Sur River region and is supposed to have been the bird spoken of by Ray in the *Osprey* of September, 1900, as the Canyon Wren. Jenkins did not meet with it nor did we see it; but we fairly certainly recognized it on one occasion from the song. It will probably be found to be a summer resident in favorable localities.

Chamaea fasciata fasciata. Intermediate Wren-tit. Common bird in the San Antonio Creek basin and noted often along the more brushy parts of the coastal slopes. Jenkins found it abundant along his route. We found it to be common also in the winter.

Polioptila caerulea obscura. Western Gnatcatcher. Found only in the oak groves about Jolon where Carriger took two sets of eggs on May 16. Both of these nests were in blue oak trees and some distance from the ground.

Progne subis hesperia. Western Martin. Seen only on the coastal slopes and in the pine and redwood belts. In the Big Creek region it was especially numerous.

Petrochelidon lunifrons lunifrons. Cliff Swallow. Seen in the vicinity of Jolon, and Jenkins met with it south of Carmel on the seacoast. Probably does not remain in the redwood zone to breed.

Riparia riparia. Bank Swallow. Noted only in the Lower Sonoran zone in the vicinity of King City.

Tachycineta thalassina lepida. Violet-green Swallow. This was a very common bird over the whole of the Transition and Upper Sonoran zones. In the vicinity of Lucia

and Big Creek large numbers of these birds were breeding in cavities in old trees, principally yellow pines. Not noted commonly in the redwood zone, as it prefers the higher and dryer slopes where the pines and firs grow.

Phainopepla nitens. *Phainopepla*. The *Phainopepla* was an uncommon bird in the oak groves in the San Antonio valley. No females were seen, and it was supposed that they might be on the nest. On June 6 we saw a pair with four young birds just able to fly.

Lanius ludovicianus gambeli. California Shrike. Seen only in the Lower Sonoran zone near Kings City.

Vireosylva gilva swainsoni. Western Warbling Vireo. Noted as being rather uncommon about the San Antonio Creek region where they were building nests on May 21. On May 31 on upper Big Creek we took a set of eggs.



Fig. 67. VIEW TYPICAL OF THE YELLOW PINE FOREST AT ABOUT 3000 FEET ALTITUDE ON THE COASTAL MOUNTAINS

Lanivireo solitarius cassini. Cassin Vireo. An uncommon bird, in the redwood and pine zone only.

Vireo huttoni huttoni. Hutton Vireo. Seen at San Antonio Creek and Santa Lucia Peak. Jenkins took a specimen from the upper Big Creek and we saw a good many birds in December along the coast. An uncommon bird.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Fairly common bird in the redwood and pine belts, and also seen on the eastern side of the coastal mountains in the San Antonio Creek basin. On May 18 Carriger took a set of eggs from the stump of a fallen white oak in the San Antonio region.

Sitta pygmaea pygmaea. Pigmy Nuthatch. One bird was seen in the redwood forest of Lime Kiln Creek, and a pair in the pines near Big Creek.

Baeolophus inornatus inornatus. Plain Titmouse. Noted in the pines near the sum-

mit of the coast range. Jenkins found it only in the Big Creek basin. On our winter trip it was also an uncommon bird and only found on the summits of the brushy ridges.

Penthestes gambeli gambeli. Mountain Chickadee. Noted occasionally in the higher growths of pines. Seen near the summit of Santa Lucia Peak and along the ridge between San Antonio Valley and the coast.

Penthestes rufescens barlowi. Santa Cruz Chickadee. Not noted on our summer trip, though we were continually on the lookout for it. Noted, however, by both Grinnell and Jenkins along the coast in summer, and Pemberton and Anderson found it to be a common bird in winter. Probably an uncommon bird in the southern part of this county in summer.

Psaltiriparus minimus minimus. Coast Bush-tit. Rather common bird in all of the more brushy parts of the entire region with the exception of the damp redwood forests.

Corvus brachyrhynchos hesperis. Western Crow. Crows were so numerous on the



Fig. 68. GENERAL ASPECT OF THE PINE AND FIR FORESTS ALONG THE CREST OF THE COASTAL MOUNTAINS; HOME OF WESTERN TANAGER AND AUDUBON WARBLER

upper San Antonio Creek as to be a nuisance. Noted on the coastal side of the mountains at an elevation of 2300 feet, and also north of the Little Sur River in the more open country, where it was also seen in winter.

Pica nuttalli. Yellow-billed Magpie. Very common bird in the upper San Antonio Creek valley. On May 18 several nests examined contained large young. While noted in winter on the Big Sur River, and recorded from Partington canyon in summer by Jenkins, it was not met with by our party in summer along the coast. It probably stays on the oak flats of the Upper Sonoran valleys almost entirely.

Aphelocoma californica californica. California Jay. A common bird in the San Antonio Valley, and seen occasionally on the coast, though away from the oak groves it is rather rare. In the redwood forests scarcely ever seen. In winter it was noted commonly south from Monterey to the Sur River wherever there were oak groves.

Cyanocitta stelleri carbonacea (near *frontalis*). Coast Jay. A very common bird in

the redwoods and pines of the coast slopes from Monterey south. In winter also a common bird. Our summer and winter specimens agree with those taken by Jenkins in showing an intermediate stage between *carbonacea* and *frontalis*. Carriger took a set of four eggs on May 26 from the limb of an oak tree overhanging the water.

Certhia familiaris occidentalis. Tawny Creeper. A common bird in the redwood zone along the coast. Several nests were found, all containing young birds, near the latter part of May. In winter this bird is gregarious, and large flocks of them were seen on the Sur River in December.

Vermivora celata lutescens. Lutescent Warbler. Noted occasionally in the redwood belt.

Dendroica aestiva brewsteri. California Yellow Warbler. Not an uncommon bird in the willows along San Antonio Creek. Not noted on the coastal slopes.

Dendroica auduboni auduboni. Audubon Warbler. It was rather a surprise to us to find this bird so numerous in summer. In winter it is a common enough bird almost everywhere, and a part of them evidently remain to breed in the redwood and pine forests along the coast. In the yellow pines near the summit of the coastal slopes this bird was to be found every day. Several were taken with ovaries highly developed and two pairs were seen building their nests, but no eggs were taken.

Dendroica nigrescens. Black-throated Gray Warbler. Noted commonly in the San Antonio Creek basin, on the summit of Santa Lucia Peak, and over the eastern slopes of the coastal range, but not in the redwoods. This bird prefers a dryer locality than the redwood belt. One was seen building a nest on May 21.

Oporornis tolmiei. Tolmie Warbler. One pair of these birds was seen on June 4 in the San Antonio Creek basin. The birds were feeding in some golden oaks on a hillside. It is probably an unusual summer resident.

Icteria virens longicauda. Long-tailed Chat. A fairly common bird in the willow thickets along the San Antonio Creek. Not noted on the coast.

Wilsonia pusilla chryseola. Golden Pileolated Warbler. Recorded by Jenkins from the Little Sur River in June. Noted by our party only at Jolon where several were seen in the willows of San Antonio Creek.

Piranga ludoviciana. Western Tanager. This is one of the typical Transition zone species, and was noted on the summit of Santa Lucia Peak and throughout the yellow pine forests of the coastal slopes. It was fairly numerous and associated with the Audubon Warblers. A pair was seen building a nest on May 31.

Euphagus cyanocephalus. Brewer Blackbird. Noted in the San Antonio Creek basin as a common species though not seen on the coast. Jenkins mentions it as occurring at a few points along the coast. Noted in winter in the Sur River canyon by Pemberton and Anderson.

Icterus bullocki. Bullock Oriole. A fairly common bird on the oak flats about the head of the San Antonio Valley, where a set of eggs was taken on May 18. Not seen on the coast.

Agelaius phoeniceus californicus. Bi-colored Red-wing. Seen in the grain fields and along the stream in the San Antonio Valley.

Sturnella neglecta. Western Meadowlark. Common resident from Monterey south to the Little Sur River where the forests begin. In the San Antonio Creek valley it was common in June. Not found in the forested part of the region.

Dolichonyx oryzivorus. Bobolink. Geo. F. Breninger reported in THE CONDOR, vol. 1, page 93, the taking of a Bobolink near Monterey on October 14, 1896.

Spinus pinus pinus. Pine Siskin. Common bird on coastal slopes both winter and summer.

Astragalinus tristis salicamans. Willow Goldfinch. Noted in the willows along the San Antonio Creek.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Noted commonly in the San Antonio valley and rarely on the coastal side. Jenkins found it all along the coast.

Astragalinus lawrencei. Lawrence Goldfinch. One bird seen on the Upper San Antonio Creek on May 19. Probably an uncommon bird.

Carpodacus purpureus californicus. California Purple Finch. Noted in the yellow pine forests on the upper slopes along the coast. A pair was seen building a nest on

May 31. Noted in winter as a common bird in the Sur River country. Jenkins also noted the bird on the Little Sur and among the pines of the upper Big Creek in June.

Carpodacus mexicanus frontalis. California Linnet. Noted all over the county, more numerous in the San Antonio valley than on the coast.

Chondestes grammacus strigatus. Western Lark Sparrow. Seen sparingly along the coast on open hillsides and in rather brushy places but not in the forests. Eggs were taken on May 30 from a nest on the ground at the foot of a yellow pine near the summit at the head of Big Creek.

Aimophila ruficeps ruficeps. Rufous-crowned Sparrow. Noted only at Jolon in a sage patch. Jenkins found it a common bird along the coast from Posts to Mt. Mars.

Amphispiza belli. Bell Sparrow. Noted on dry hillsides at the head of San Antonio Creek, on the slopes of Santa Lucia Peak, and near Jolon, though not on the coastal side excepting in winter when it was a common bird in the Sur River country.

Junco oreganus pinosus. Point Pinos Junco. A fairly common bird in the pine forests on both sides of the coastal mountains. Young birds out of the nest were seen

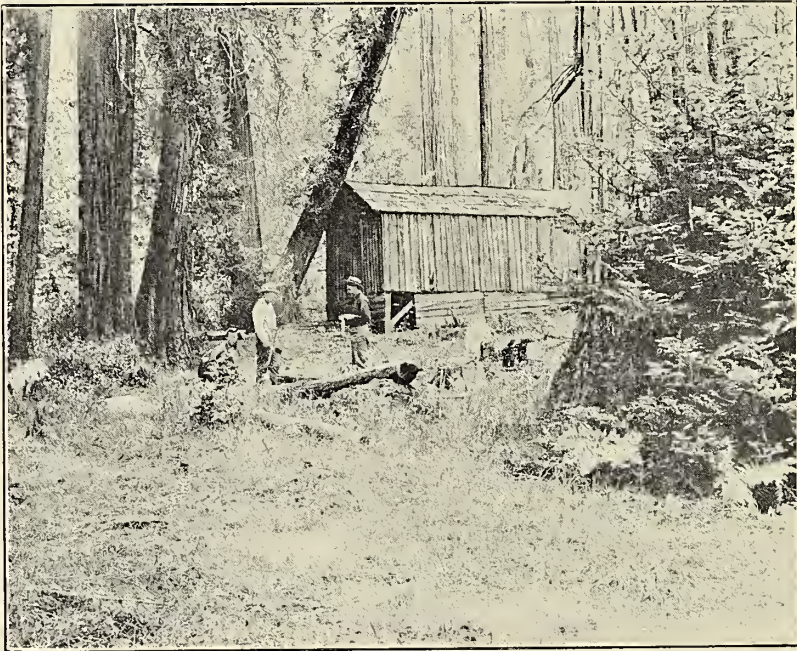


Fig. 69. IN THE REDWOOD BELT CLOSE TO THE COAST, HOME OF TAWNY CREEPER, COAST JAY, AND MONTEREY HERMIT THRUSH

on May 23, and several sets of eggs were taken later in the season. Noted by Grinnell and Jenkins as a common bird in summer, and Pemberton and Anderson found it a numerous bird in the winter in the Sur River district.

Spizella passerina arizonae. Western Chipping Sparrow. Noted as a common bird in the pine forests along the coast, and several sets of eggs were taken. Jenkins also noted it in June on the upper Big Creek.

Spizella atrogularis. Black-chinned Sparrow. Taken near the top of Santa Lucia Peak and not seen elsewhere.

Zonotrichia leucophrys gambeli. Nuttall Sparrow. Noted as a very common bird near the coast, where it stays at the lower levels in the lupines and low brush.

Melospiza melodia santaecrucis. Santa Cruz Song Sparrow. Noted everywhere in favorable localities: along San Antonio Creek, at a small spring on the side of Santa Lucia Peak at an elevation of 3500 feet, and at the mouths of all the streams entering the ocean on the coast side.

Pipilo maculatus falcifer. San Francisco Towhee. Noted on the upper slopes of Santa Lucia Peak and commonly all over the coastal slopes. Is a common resident.

Pipilo crissalis crissalis. California Brown Towhee. Rather common bird throughout the region in both the Upper Sonoran and Transition zones.

Passerina amoena. Lazuli Bunting. Noted at Jolon and on the coastal slopes where it was often seen in the dryer brush patches. Jenkins speaks of it as rather more common than we observed it to be.

Zamelodia melanocephala capitalis. Pacific Black-headed Grosbeak. Noted on the upper slopes of Santa Lucia Peak and in the pine forests along the summit of the coastal mountains at the head of Big Creek. Jenkins met it commonly in many localities.

Passer domesticus. English Sparrow. A common bird around the little town of Jolon, though not noted away from settlements.

The following list of the winter visitors noted on the winter trip of Pemberton and Anderson gives a further idea of the character of the region.

Sphyrapicus varius ruber or *daggetti*. Red-breasted Sapsucker.

Planesticus migratorius propinquus. Western Robin.

Ixoreus naevius naevius. Varied Thrush.

Regulus calendula grinnelli. Sitka Kinglet.

Sialia currucoides. Mountain Bluebird.

Anthus rubescens. American Pipit.

Bombycilla cedrorum. Cedar Waxwing.

Dendroica townsendi. Townsend Warbler.

Sayornis sayus. Say Phoebe.

Passerculus sandwichensis sandwichensis. Western Savannah Sparrow.

Zonotrichia coronata. Golden-crowned Sparrow.

Passerella iliaca iliaca. Fox-colored Sparrow. (See CONDOR, x, p. 50.)

Passerella iliaca meruloides. Yakutat Fox Sparrow.

San Francisco, June 6, 1915.

FROM FIELD AND STUDY

Range of the California Clapper Rail.—While reading recently Mr. Wells W. Cooke's excellent bulletin on the North American Rails (Bull. U. S. Dept. Agric. no. 128), my attention was attracted to the fact that the range of the California Clapper Rail (*Rallus obsoletus*) as given in this bulletin was very much circumscribed and did not include the sloughs radiating from Monterey Bay.

It is a well known fact among working ornithologists in this immediate section that Elkhorn Slough, Tembladero Slough, and other salt water marshes tributary to Monterey Bay are regularly but rather sparingly inhabited by these birds. They are constant residents of the sections that they frequent. My friend, Mr. A. G. Vrooman of Santa Cruz, has a set of eggs taken a few years ago by his son near Elkhorn, Monterey County, —a small siding on the line of the Southern Pacific Railroad. Eggs have also been taken near the same place by Mr. Thomas Hudson of Watsonville.

These records extend the range of this Rail some eighty miles to the south and, taken in connection with the Humboldt records of this bird as given by Mr. Tracy I. Storer in the CONDOR for March, 1915, give it a considerably wider range than would seem to be indicated in Mr. Cooke's bulletin.—O. P. SILLIMAN, *Castroville, California*.

Bird-study Out-of-doors in European Schools.—The Sacramento Chamber of Commerce City Planning Committee brought here, Dr. Hegemann, German City Planning Expert. He suggested obtaining a volunteer to study European City Planning, including nature study methods. This citizen brought from Europe some interesting photographs. The one presented herewith (fig. 70) shows the Royal Hunting Lodge in the Copenhagen Deer Park, with blind school students enjoying a nature study outing.

The report states that nature study field excursions in Europe are as far in advance

of America as Europe is behind us in playground work. Field trips are utilized in many kinds of school work. In Switzerland, children are taught history on the battlefields. Sempach, Morgarten, the struggle of their ancestors against the Hapsburgs, are more than mere printed words.

These outings are especially utilized in nature study, in acquainting the children with the wild life. Thus, the blind child can be taught the bird songs even though he cannot see the songster. With ears made more sensitive by his affliction he may, because of the very pathos of his affliction, become a wonderfully effective missionary for conservation.

In Holland the outdoor school excursion is linked with the local museum existing in



Fig. 70. BLIND SCHOOL PUPILS ENJOYING A NATURE-STUDY OUTING IN A DEER PARK IN COPENHAGEN

almost every village. Wooden-shoed children early in life are banded into what in America would be Audubon Societies. They are systematically taught to love, not to destroy.

Switzerland is so thoroughly organized and game so plentiful that venison is served regularly on the Government dining cars. You may be greeted by the Swiss who happens to be at your table with: "You are guests of our Government. We give you something unknown on American diners, fresh venison. Because of its youth, your country ought to have more than an older civilization like ours."

Europe's secret seems to be the forming of conservation habits while the child mind is plastic.—C. M. GOETHE, *Sacramento, California*.

Scissor-tailed Flycatcher in Southern California.—Dr. I. D. Nokes of this city has recently submitted to me for identification a specimen of the Scissor-tailed Flycatcher (*Muscivora forficata*) collected by himself, with the added request that I place on record a statement regarding the capture of the bird. It was taken on June 26, 1915, in the northern part of Los Angeles County, on the road to Elizabeth Lake, at a point a little to the north of Boquet Canyon. The bird, flitting from fence-post to fence-post along the road, was first observed by Mrs. Nokes as something out of the ordinary, and she pointed it out to her husband, who promptly secured it. The specimen, in the flesh, was turned over to Dr. J. Hornung, employed as taxidermist in this Museum, who made it into a study skin for Dr. Nokes, together with the rest of the birds collected by him on that day.

The flycatcher on dissection proved to be a male, though in its small size, relatively short tail, and lack of concealed red crown spot, it has much the appearance of a female. Though adult it was evidently not a breeding bird. The plumage is rather worn, though not excessively so. On the top of the head, between the eyes, is a partly healed injury, such a wound as might be caused by flight against a telegraph wire or some such obstruction.

The capture of this individual adds a new species to the list of California birds, but in what sense this addition should be made is a matter in which opinions will probably differ. That it can be considered an extension of range, merely the wandering of an individual somewhat beyond the normal confines of the species as known at present, and consequently an occurrence the repetition of which may be confidently expected in the future, seems to me a matter of some doubt. I do not regard the capture in California of this Scissor-tailed Flycatcher as comparable to the previously recorded instances of such rarities as the Eastern Kingbird, Eastern Phoebe, Oven-bird, Magnolia Warbler, and certain others. The occurrence of individuals of these several species, as regards season of capture, known range of the forms, usual migration route, etc., may be regarded, though certainly extraordinary, as explicable as the voluntary actions of normal, unconfined individuals of the several species of birds. This Scissor-tailed Flycatcher, it seems to me, belongs rather in the category of "accidentals" which are regarded with some suspicion as introductions directly due to human agency, fortuitous or intentional.

I do not mean to suggest by this that it is necessarily an escaped caged bird, for the species is obviously not one to endure captivity. Mr. F. S. Daggett has suggested one possible means of introduction that certainly seems worthy of consideration, namely, by accidental captivity within a box car used in transporting live stock. The swarms of flies in such a place would afford attraction to a bird of this species, and the distance between the place of capture and the nearest point in the known habitat of the species is not so great but what the bird might easily survive the trip. This is not put forward as an absolute explanation of the happening, but merely as one way in which it might have been brought about. The partly healed injury on the head of the bird certainly suggests some abnormality in the occurrence.—H. S. SWARTH, *Museum of History, Science and Art, Los Angeles, California.*

Supposed New Records for Santa Cruz Island.—Through the courtesy of our distinguished fellow-member, Mr. Joseph Mailliard, and his friend, Mr. Arturo Caire, one of the present owners of Santa Cruz Island, I was permitted to spend nearly three weeks, viz., April 3rd to 22nd, with my son William, on this enchanted spot. We made camp at Prisoners Harbor and devoted ourselves chiefly to a study of the endemic Jay, *Aphelocoma insularis*, of which sixteen nests were found. Besides this we found time to make several excursions into the interior of the island, and one to the west end. A horizon of eighty species resulted, and of these, fifteen appear not to have been previously reported, viz.:

Gavia immer. Loon. A full-plumaged adult was sighted at Prisoners Harbor on the 14th and appeared several times thereafter at near ranges. Four others were seen close inshore on the south side of the island on April 19. There has been an unusual number of Loons, both senescent adults and non-breeding immatures, in the Santa Barbara channel and its tributary lagoons during this past season.

Gavia stellata. Red-throated Loon. A single individual in partial summer moult, first observed on the 9th, was repeatedly seen at Prisoners Harbor.

Colymbus auritus. Horned Grebe. A pair of these birds in semi-breeding plumage haunted Prisoners Harbor throughout the interval of our stay. Toward the last there were increasing signs of mating interest.

Chen hyperboreus hyperboreus. Lesser Snow Goose. Two winged birds are kept in an enclosure at the main ranch. These were obtained about a year ago, according to Messrs. Revell and Luchelli, from flocks which numbered thousands.

Larus argentatus. Herring Gull. Two birds were found associating with Westerns and Californias at the West ranch on April 13.

Asyndesmus levisi. Lewis Woodpecker. A single bird haunted the roof of an old barn near the main ranch on April 4. He was not again seen.

Planesticus migratorius propinquus. Western Robin. Several Robins were seen in a group of oak trees southeast of the main ranch,—for the last time on April 11.

Ixoreus naevius naevius. Varied Thrush. A single bird flushed in the chaparral at close range on April 5, and another was sighted on the day following.

Bombycilla cedrorum. Cedar Waxwing. A flock of about forty birds appeared on the 11th near our camp, and they fed upon the berries of the Christmas Holly, *Heteromeles arbutifolia*, for a week or more thereafter.

Vireosylva gilva swainsoni. Western Warbling Vireo. A single male was heard singing in the Valle Centrale on Easter Sunday, April 4.

Dendroica nigrescens. Black-throated Gray Warbler. Two singing males just arrived from the south were picked up in a little canyon near the Sul ranch on the 19th.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Mr. Luchelli has an undated specimen, a male, which he took near the main ranch last year.

Spinus pinus pinus. Pine Siskin. Several times encountered in the Monterey pine belt, where it probably breeds.

Zonotrichia leucophrys nuttalli. Nuttall Sparrow. A certain proportion of crown sparrows seen at the west end of the island were of the "small black" type, unmistakable *nuttalli*.

Passer domesticus. English Sparrow. Woe the day! I could hardly believe my ears, at first, when the stridor of this ancient vermin assaulted them from the peak of a warehouse roof at Prisoners Harbor. The single bird, a female, sighted early in the morning of the 18th, had, possibly, just arrived from the mainland shore 25 miles distant. No others were seen during our stay.—WILLIAM LEON DAWSON, *Santa Barbara, California, July 30, 1915.*

A Foe of Johnson Grass.—On the afternoon of July 9, while busy digging out Johnson grass along a line fence, I was startled by an unusual bird song, and looking up I beheld a male Blue Grosbeak who sang between meals as he swayed on the pendant ripening heads of this obnoxious grass. This was the only bird of any species that I have observed feeding to any considerable extent on this altogether too abundant food supply. One would have thought to see him work that he, too, had heard the order of the horticultural commissioner. If "By their fruits ye shall know them", applies to birds also, then the farmer certainly ought to chalk down at least one big round credit for the Blue Grosbeak.—JOSEPH DIXON, *Escondido, California.*

Fork-tailed Petrels Delayed by Storm.—The heavy windstorm of April 29 and 30 along the California coast caught many of the northern birds migrating, and its effect in delaying the northward movement was very evident.

On the evening of April 30 my son Edmund, who attends school at Monterey, brought me a Fork-tailed Petrel (*Oceanodroma furcata*) which was still alive. This bird had been procured from a flock estimated at about two hundred birds that was stranded along the beach between the Monterey wharf and the Del Monte bath house. The birds appeared lost and helpless in the 60 or 70 mile gale that was raging, and could fly only short distances, when they would again alight on the beach.

Additional evidence on the effect of the storm on this species was found on May 9, when a dead Fork-tailed Petrel was picked up along the beach at Moss near the center of the semi-circle formed by Monterey Bay, and several miles out of the migrating route of most pelagic species.—O. P. SILLIMAN, *Castroville, California.*

The House Finch Again.—A further instance of the Linnet (*Carpodacus mexicanus frontalis*) occupying the nest of another bird was observed by me on May 31st last. A

cottonwood stub was found in the Santa Anita Canyon containing two old woodpecker holes some ten feet from the ground. The Linnets had originally intended to occupy the upper "flat", but for some reason had abandoned it and had moved below. The cavity was nearly filled with the nesting materials, the five eggs being but about one inch below the level of the entrance; the latter was one and one-half inches in diameter. The excavation was eight inches deep and four in diameter.—D. I. SHEPARDSON, *Los Angeles, California*.

Late Nesting of the Townsend Solitaire.—On July 16, 1915, I discovered a nest of the Townsend Solitaire (*Myadestes townsendi*) on Bear Creek, in Plumas County about two miles west of the north end of Gold Lake. The nest was built of weed stems and was placed in a crevice of a rock along side of a small waterfall. It was so situated that overhanging and projecting rock sheltered it on all sides except one. Three eggs were in the nest and on July 22 they were still unhatched. The sitting bird was flushed several times. She remained in the near vicinity and each time was soon joined by her mate. Neither bird made the slightest noise; nor was the male bird heard singing although our camp was only twenty yards from the nest. This appears to be the latest recorded nesting date for this species.—H. C. BRYANT, *Berkeley, California*.

A Notable Occurrence of Pacific Divers.—On the 13th of April, 1915, during the prevalence of a strong west wind at Santa Cruz Island, I came upon a company of at least 200 Pacific Loons (*Gavia pacifica*) breasting the storm and fishing in the outer surf just off a bold cliff near the West ranch. Fully half of the birds were in spring plumage, and they afforded a magnificent spectacle, something in the nature of a naval review, as they rode bow on to the weather or else submarined in relays after smelt. The fleet of divers turned watchful periscopes toward the skyline, and I was obliged to retire behind a parapet of grass before they would relax their vigilance.—W. LEON DAWSON, *Santa Barbara, California*.

Late Migration of the Cedar Waxwing.—On June 20, 1914, my brother, W. G. Silliman of Salinas, had occasion to stay for the night at Bradley, a small town near the southern boundary of Monterey County. While taking a short walk after dinner his attention was attracted by fourteen strange birds perched upon a small cottonwood tree and the fences nearby. While not an ornithologist my brother is fairly familiar with our local birds, yet could not name these. Upon being shown specimens of about twenty birds, he immediately picked out a Cedar Waxwing (*Bombycilla cedrorum*) as being the same as the birds seen at Bradley. He says that there can be no doubt as to their identity. Judging from their actions they were migrants instead of resident birds. I have no winter records for this bird at this particular locality.—O. P. SILLIMAN, *Castroville, California*.

Western Gull and Arctic Tern: Corrections of Records.—Through a fortunate accident I was recently able to prevent the published repetition of certain erroneous printed statements concerning the Western Gull (*Larus occidentalis*) and the Arctic Tern (*Sterna paradisaea*) in southern California, and the incident suggested the desirability of publishing corrections of the mistaken records.

Western Gull. In a list of birds from the vicinity of Los Angeles published some years ago by myself (CONDOR, II, 1900, p. 14) I included this species as occasionally common during the winter, a statement which I am now satisfied was absolutely a mistake. The point at which these observations were made is some fifteen miles from the ocean. Along the nearby ocean beaches *Larus occidentalis* is probably the most abundant species of gull; so, seeing gulls flying overhead frequently, and occasionally alighting, I included this species as a matter of course. No specimen of *occidentalis* was secured, the few gulls shot proving to be *argentatus*, and I have never, at that time or since, had any evidence of the occurrence of *occidentalis* so far from the sea. *Larus delawarensis* is quite common inland in southern California, as in all probability *L. californicus* is also, and I have frequently seen the Herring Gull (*L. argentatus*) on the uplands of Los Angeles County at sufficiently close range to render identification certain, but I have never observed *occidentalis* under such conditions.

It may seem a trivial matter to make a correction of range involving a matter of only fifteen miles, in a species as wide ranging as the Western Gull, but the point is that the bird is evidently strictly a maritime and littoral species, seldom or never wandering far from the sea. As my own published statement seems to be the only definite one ascribing the bird to an inland point in southern California, and as I have for years been satisfied of its inaccuracy, it seems advisable that a correction be made.

Common Tern. Willett (Pacific Coast Avifauna, no. 7, 1912, p. 16) has recorded the Artic Tern (*Sterna paradisaea*) from Los Angeles County on the basis of three specimens collected by Mr. F. S. Daggett (see CONDOR, v, 1903, p. 17) and one by myself. Having recent occasion to refer to my specimen I found that it was the Common Tern (*Sterna hirundo*), and labelled as such. Just how the mistake arose, I do not know. Discovery of this mistake induced me to examine Mr. Daggett's three specimens, and these, too, are unmistakably *Sterna hirundo*.

This removes a species from our southern California list, for there is no other record of *S. paradisaea* for this region. With little doubt, however, it does occur, at least occasionally, along our seacoast.—H. S. SWARTH, *Museum of History, Science and Art, Los Angeles, California*.

Bluebird Nesting in Low Country.—Dr. L. H. Miller's note in the last CONDOR anent the breeding of the Western Bluebird (*Sialia mexicana occidentalis*) reminds me of two similar instances that I noted this spring. On April 25 I found an uncompleted nest in a white oak near Arcadia, containing two fresh eggs. On May 13 a pair had a nest with three eggs in a willow tree at the entrance to Griffith Park near the Los Angeles River. I have often noted the birds in this vicinity during the breeding season. This species seems much more common lately near the city of Los Angeles than in former years.—D. I. SHEPARDSON, *Los Angeles, California*.

California Pine Grosbeak in Mono County, and Other Notes.—While descending a small branch valley of Mammoth Pass, southern Mono County, California, July 31, 1914, I flushed a pair of California Pine Grosbeaks (*Pinicola enucleator californica*) that was feeding on the ground beside a stream at an altitude of about 9500 feet. The brightly colored male flew into a pine tree, where I shot him, but the female disappeared far up the mountain side. On August 5, while armed only with a light fly-rod, I spent five minutes watching another male that was feeding on the tender tips of a small spruce near me, at, I should say, an elevation of 9000 feet. As far as I am aware, this subspecies has never before been taken so far south.

While passing the dairy corral of a neighbor near Covina, Los Angeles County, April 29, 1915, a male Dwarf Cowbird (*Molothrus ater obscurus*) flew up on the fence within fifteen feet of me and remained several minutes before returning to the ground farther away. By the time I had fetched my gun, he had disappeared. My chance for observing him was too good for there to have been a mistake in identity.

I placed two bales of hay in the shade of a large orange tree six weeks ago. Upon removing these June 18 I found that a pair of Valley Quail (*Lophortyx californica valli-cola*) had taken possession of them. The bales were one on top of the other and merely in the shade of the tree without any dense protection of surrounding growth such as these birds usually demand, but there was a deep hollow formed in the straw of the top bale some four feet above the ground, and in this were three fresh eggs.

The White-tailed Kite (*Elanus leucurus*) is now so rare in our southland that it seems advisable to record one which I saw June 2, 1914, some two miles from El Monte, Los Angeles County. I was hunting in a grassy marsh all day and came quite close to the bird several times, once as near as a hundred yards. I hunted diligently for a nest or young, but I believe it likely that this was merely a lone individual. About a week later A. van Rossem visited this spot and noted what was undoubtedly the same bird.—A. BRAZIER HOWELL, *Covina, California*.

A New Bird for the Pacific Slope of Southern California.—Recently there came into my possession a Great Horned Owl that seemed much lighter in coloration than the horned owls I had seen from this locality. The bird was found dead at the mouth of San Antonio Canyon, Los Angeles County, elevation about 2000 feet, on January 10, 1915, by a Mr. Forbes of this place. The bird was sent to Mr. Grinnell for his opinion as to its

identification, and he pronounced it *Bubo virginianus pallescens*. To quote: "The Owl I consider to be *Bubo virginianus pallescens*, as it is very similar to specimens we have here from the Colorado Desert." To make more certain Mr. Grinnell advised that I send the bird to Mr. H. C. Oberholser at Washington. Mr. Oberholser writes: "It seems to be undoubtedly *Bubo virginianus pallescens*, though certainly from an unexpected locality." The bird is now no. 692 coll. W. M. P.; unsexed, though probably a female, because of its large size.—WRIGHT M. PIERCE, *Claremont, California*.

Limicoline Laggards at Santa Barbara.—The old declaration, the exception proves the rule, will not, of course, bear the test of a rigid logic; but unseasonable records have a fascination for most of us quite out of proportion to their real value. The following records, taken chiefly by Commander and Mrs. H. E. Parmenter at Santa Barbara this past June, prove no rules, but they do serve to establish a presumption that laggards of almost any species of shorebirds may be found stumbling along in the wake of the main host. Non-breeding birds do not refuse altogether to obey the migration impulse, but they may yield only a partial obedience to its behests, and they exhibit every degree of failure in the realization of the high goal. Only two of the species given below, the Sanderling and the Black-bellied Plover, rest solely on my own observation. For the rest we are indebted to Mr. and Mrs. Parmenter, both for painstaking research and for permission to publish.

Recurvirostra americana. Avocet. One at La Patera, June 1, 1915.

Himantopus mexicanus. Black-necked Stilt. One at the Estero, Santa Barbara, June 12.

Ereunetes mauri. Western Sandpiper. One at La Patera, June 1; one at Sandyland, June 9.

Calidris leucophaea. Sanderling. Twelve at Sandyland, June 5.

Limosa fedoa. Marbled Godwit. Two at Sandyland, June 4; five on June 9.

Totanus melanoleucus. Greater Yellowlegs. One at Estero, S. B., June 7.

Catoptrophorus semipalmatus inornatus. Western Willet. One at La Patera, June 1; one at Sandyland, June 9; one, June 25.

Numenius americanus. Long-billed Curlew. Six at Sandyland, June 4.

Numenius hudsonicus. Jack Curlew. Thirty at Sandyland, June 4; thirteen on June 9; eleven, June 25; one at Goleta, June 30.

Squatarola squatarola. Black-bellied Plover. Two birds in winter plumage at the mouth of Romero Creek, June 5.

Oryechus vociferus vociferus. Killdeer. Sparingly resident.

Aegialitis nivosa. Snowy Plover. Resident at La Patera and Sandyland.

Aphriza virgata. Surf-bird. Two at mouth of Romero Creek, June 4.

Arenaria melanocephala. Black Turnstone. One at Romero, June 7.—WILLIAM LEON DAWSON, *Santa Barbara, California, July 30, 1915*.

Another Mexican Ground Dove for California, and Other Notes.—In a small but select and excellently prepared collection of mounted birds belonging to my friend, Mr. Ashley Walker of Salinas, the following seem worthy of record.

A Mexican Ground Dove (*Chaemepelia passerina pallescens*), picked up dead from the lawn in front of a farm house in the Blanco district near here. This was in the middle of June, 1913.

A Fulvous Tree-Duck (*Dendrocygna bicolor*), taken in November, 1910, from a salt pond near Graves, a small siding on the railroad just north of Salinas. This makes the third record for Monterey County so far as I am aware.

A Black Tern (*Hydrochelidon nigra surinamensis*), taken from a nesting colony at Merritt Lake near Castroville.

A Wood Duck (*Aix sponsa*), taken October 20, 1908, from the Tembledero Slough near Castroville. This bird is becoming so rare that this occurrence seems to merit recording.—O. P. SILLIMAN, *Castroville, California*.

THE CONDOR

A Magazine of
Western Ornithology

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J. GRINNELL, Editor

HARRY S. SWARTH, Associate Editor

J. EUGENE LAW

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EDITORIAL NOTES AND NEWS

The lateness of the present issue is due to the necessity of carrying on the editorial functions of proof-reading, etc., from the field. A certain corner of Mono County, California, by the way very interesting ornithologically, is some six days distant by mail from San Jose, in the same state, where THE CONDOR is printed.

The National Association of Fish and Game Commissioners met in San Francisco early in September, with several Cooper Club men interested in game conservation taking prominent part. The educational method of enforcing game-laws, a policy recently adopted by the California Commission, was the theme of the paper spoken of as the most important one of the session. Much of the success of the convention was due to the energetic efforts of Mr. Ernest Schaeffle, Secretary of the California Fish and Game Commission.

The magazine *Blue-bird*, published by Dr. Eugene Swope, at Cincinnati, Ohio, is running a series of very creditable colored plates of birds' eggs, evidently reproduced from autochrome photographs. Further possibili-

ties in this line are thereby suggested, so that with perfecting of methods, especially as to the speed of autochrome plates, we may expect before long color-photos of living birds.

As noted on page 212, the Cooper Club's list of Honorary members has been increased by the addition of the name of Henry W. Henshaw, now Chief of the Bureau of Biological Survey, and at one time active as a field ornithologist in many parts of the west. It will be noted that the small number of elections to this class of membership denotes special distinction,—a sort of emeritus recognition of creditable work in western ornithology in earlier days when workers were few and the stimulus of fellowship perhaps less in evidence than now as a spur to effort.

The Northern Division of the Cooper Ornithological Club was addressed at its September meeting in Berkeley by Dr. William T. Hornaday, who spoke on the question: "Shall we increase our big game on a food-supply basis?"

Ewen S. Cameron, well known for his many excellent articles on Montana bird-life, died on May 25, 1915, at Pasadena, California. Cameron was born in Scotland, December 19, 1854, and latterly carried on the business of cattle-ranching for many years in the vicinity of Marsh, Montana. While thus interested, all his spare time was devoted to ornithology, in which pursuit his wife aided through her successful work with the camera. Scores of articles under the authorship of "E. S. Cameron", creditably describing different phases of the bird-life of Montana and Dakota, have appeared in various magazines, notably *The Ibis*, *The Auk*, *Recreation*, *Country Life*, and *Field* (English).

COMMUNICATIONS

FAIR PLAY FOR THE COLLECTOR: AN OPEN LETTER

Dr. Harold C. Bryant,

Game Expert, in Charge Education, Publicity and Research, State Fish and Game Commission, Berkeley, California;

My dear Sir:

It is with great pleasure that I learn of your advancement in the service of the California Fish and Game Commission; and I am informed that your new duties will include that of issuing permits to scientific collectors. You are to be congratulated upon these new honors, so well deserved; and we who collect congratulate ourselves upon having to deal with a man of broad and well-balanced sympathies, as well as of scientific training and field experience.

Your working chief, Mr. Ernest Schaeffle, was so good as to propose that I offer you a few suggestions regarding the execution of these new duties; and you will receive in good part, I am sure, from so sincere a well-

wisher as myself, a little counsel regarding a difficult task, as well as a friendly plea on behalf of a long-suffering and somewhat neglected race, viz., the scientific collectors. I shall not presume to speak of all collectors, either. The collector of birds, the "skinman", has legitimate aims and as good a license as any; but he is quite able to speak for himself. All I know is that a dead bird sings no songs and lays no eggs; whereas a hen deprived of her egg presently lays another and cackles as merrily as before. I belong to that humble class which finds in the collecting of birds' nests and eggs a solace and inspiration elsewhere denied; and I suppose I may speak for the oölogical fraternity with some degree of confidence.

In exercising the authority conferred upon you by Section 637e of our political code, you will wish to adjudicate fairly between the paramount interests of conservation and the desires of the collector. You will, doubtless, wish to deal frankly and liberally with the scientist in order that he may feel encouraged in his pursuit of knowledge, instead of finding himself an object of suspicion, hindered and repressed. Lastly, you will wish to be impartial in all your dealings, and to place all collectors upon an equal footing, as is becoming in a democracy.

To treat these matters in reverse order, and to speak of equal dealing first: The language of Section 637e gives you great discretion as to what constitutes proper credentials; but it is manifest that a standard once adopted should apply impartially to all applicants. It would be as unlawful as it would be unfair, for instance, to permit one applicant to collect without limit, while another of the same age, but possessed of less funds, or "influence", or supposed prominence, should be restricted to "two sets each of non-game birds". While the language of the statute is permissive in saying that "certificates *may be granted*", it is exceedingly doubtful whether any court would uphold you in denying a certificate to *any* "properly accredited person" while you were issuing such to others. If, however, it should seem, for economic reasons, desirable to restrict the total number of licenses (a situation which is quite unlikely to arise with the present trend of events), it would be fair to impose restrictions upon younger and presumably less serious collectors, upon stated terms of equality for that age. It would be no essential hardship, for instance, to require a boy of twelve to confine himself to a single set of eggs of each species per season. By the time he is eighteen

he will either have dropped his boyish fad, or else have demonstrated his fitness to collect without limit other than that imposed by the general condition of all licenses.

Similarly, and with all due respect, it seems to me that the Commission has no right, either moral or legal, to restrict the collection of the eggs of game birds within limits narrower than that of the total lawful kill of a sportsman for a season. I do not shoot Valley Quail myself, but is my lawful claim upon the quail population any less than that of my sportsman brother who shoots his little twenty per diem? See, that gives him a possible 610 in one season, does it not? Well, I take a couple of sets of twelve eggs each for my annual portion (raise 'em on my own place too). Upon what moral grounds shall I be reproved and my brother commended? Moreover (and this is important), eggs are replaceable *the same season*; birds are not.

This is a tender subject for discussion, I know; but I am sure that our sportsman friends, those who practically have both the enactment and enforcement of all game laws in their hands, will want to be fair with us. Sport in the open begets a spirit of fairness, does it not?

Truth to tell, science needs especial encouragement at this time. By "science" I do not, of course, mean egg-collecting as a fad, as a mere instance of the working of the acquisitive instinct; but I mean that knowledge and power, and that love of the truth, which comes of first-hand contact with nature out-of-doors, and of attentive familiarity with her objects indoors. The aspirations and operations of zoological science have suffered not a little, of late, from repression, from sentimental jealousies, and from the constrictions of official red tape. This has begotten a contemptuous disregard of law on the part of those who have known better days, and an avoidance of this entire field of effort on the part of the younger generation. Both of these results are deplorable; and it may be your happy task, by your fairmindedness and sympathy and by your prompt consideration of all applications, to bring about a better understanding between lawfully constituted authority and scientific initiative. There is sad lack of such understanding today. Not half of the oölogical collecting now being done in America is done under license; and the knowledge of this fact on the part of the conscientious element among collectors themselves, together with a knowledge of the red-tape and picayune surveillance exercised over the *most* conscientious, has embittered the whole situation. As an example

I may cite the fact that the writer in applying, late in the season, for a license to collect in the State of Ohio in the season of 1909, found that there was only *one* other application in. Yet anyone who knows the average situation in the East, would wager there were a thousand collectors, from schoolboys up, taking unlicensed toll of the birds at that very time. That is a very modest estimate, for it gives only one collector for each 4700 of population in Ohio. That the situation may be somewhat nearly the same in California, I leave to your own imagination.

Another obstacle to a complete understanding between collectors and the Commissioners, lies in the ambiguity of the phrase "scientific purposes". It has been assumed by certain officials, entirely without warrant, that scientists do not use money, or that science is merely a pastime instead of (occasionally and happily) a profession. This bald assumption that the use of money is unscientific, and that a monetary consideration in the exchange of the objects of science is unscientific and therefore unlawful, has brought the whole mechanism of scientific exchange as well as scientific acquisition and quest to a standstill. Either that, or it has plunged its participants into a fogbank of hypocrisies and deceptions. The situation is impossible. Why, even preachers, who dispense a "free" gospel, must "live of the gospel", "for as the Scripture saith, thou shalt not muzzle the ox that treadeth out the corn". The transfer of a scientific specimen from one cabinet to a better one is of most distinct benefit to science, if both parties to the transaction are scientists and know what they are handling. The "consideration" may have been a return in kind, or cash, according to the exigencies of scientist number one. The transaction is no less scientific, or for less "strictly scientific purposes", if a scientist knowing what he wants and approximately where to get it, commissions party number one, who may be a scientist or a farmer or a sailor, to get it for him, and pays him for his time or for the job. The thing is done every day and is done in high places, and it *is* scientific in its results. That these transactions sometimes take place under the frown of the law or under its (*supposed*) prohibition is only evidence of the wretched tangle into which we have got ourselves. Now I propose to have this whole matter cleared up. At least I propose that we see justice done, and not sit idly by while all public museums and wealthy collectors buy what impecunious

collectors are forbidden (by assumption and common report) to sell.

I know that this, too, is a very tender subject. I know that the assumption aforesaid (worked to a finish here in California) has had a salutary influence in restraining the operations of unprincipled collectors (*not* scientists) who were out for the coin. These collectors, precisely because they were not scientists, have sold their wares to "egg-hogs", have made incorrect or haphazard identifications, or have handled faked data. The day of the commercial collector is happily past; but did we not do evil that good might come? And has not Science, legitimate, simon-pure, high-minded Science, suffered immeasurable injury thereby? Ask any man who is trying to build up an important collection.

Now what I propose is this: First, that Science be removed from under the ban of this official bluff and be allowed to pursue its legitimate course in such ways as it deems fit. Second, that in return for this release (which could surely be enforced if the thing came to a legal test), and as a condition of its free concession, that the Fish and Game Commission, or, more explicitly, your office, be taken into fullest confidence in all matters involving proposed exchange for a cash consideration. Upon this basis you would be allowed to pass upon the wisdom of such exchange in accordance with certain specified rules, and these rules would have in mind the authenticity of the material, the scientific standing of the parties concerned, and the just claims of conservation. In this way a widow might be able to realize on the oölogical collection which some ardent, but improvident scientific husband has left her as a sole legacy; the Museum of Vertebrate Zoology might be able to purchase some choice material from an impecunious collector who on these conditions alone could spare his prizes and bless himself with more; and the plain collector could afford to back up some honest swain who thinks he has found a gollapoose's nest and must take a day off during harvest if he is to get it for you. These things are done every season, and in my opinion they are lawfully done; but it seems to me it would be a little nicer if the Commission knew all about it.

In considering the just limitation imposed by the conservation interest upon the activities of the collector, I beg to remind you that the destructive effects of egg-collecting have been enormously over-rated, and that nature's recuperative powers have been wil-

fully underestimated. Save in the vicinity of the large cities and in the case of certain rare species, upon which hostile attention may be focussed by very reason of their rarity, the economic status of bird-life in California would not be visibly affected were there ten times the present number of licensed collectors. A thousand such collectors working diligently throughout the season would not exact a toll upon bird-life one per centum as great as that now being sacrificed annually to the activities of the California Jay. If every collector killed ten Jays per season, his own oölogical activities would be more than compensated thereby.

Moreover, Nature has already made liberal allowances for wasted effort in reproduction. "Try again" is the rule rather than the exception throughout this realm. I once knew of a Western Bluebird (not on my own premises) which, in attempting to raise a family where its presence was not welcome, provided six successive nests of six eggs each in one season. This year I noted two Blue Jays which built new nests and completed second sets of five eggs each within thirteen days after being deprived of their first clutches. A Shrike under similar circumstances showed up with a nest of five eggs on the tenth day after being robbed. These facts are not such as to elicit tears from well-balanced natures.

But there are unquestionably certain species of birds whose existence is threatened not alone by wanton gunfire, but by the collector. In endeavoring to protect such species the Commission has already adopted an enlightened policy of restriction. The specific reservations made have been just ones, and all that remains to do is to enforce this policy rigorously. I am sorry to say that collectors themselves have not always been fair in the observance of these requirements. In particular, I happen to know that the Golden Eagle is being robbed unmercifully, and that there has been a strong decline in its numbers and an attendant failure to breed within recent years. Collectors are not solely at fault, for every wastrel with a gun assaults these splendid birds. Yet, at the risk of regrettable "red tape", I would exact from every party applying for a re-issue of the license an *affidavit* that he had not molested any of the contraband species.

When (if ever) certain of these species had sufficiently recovered, I would grant permission to each collector to take, in person, one, and only one, set of such species, in order that his collection might be complete.

In like manner I believe that there are many other species which require partial protection, and I think that such restriction would be decently observed, if the collector were allowed to take just one set of such species. I would respectfully recommend that the following species be now placed in such a category.

American Egret
Snowy Egret
White-faced Glossy Ibis
Redhead
Canada Goose
California Black Rail
Black Oystercatcher
Least Tern

In conclusion, allow me to say just a word in defense of egg-collecting itself. There is, of course, no use in pulling a long face about it and trying to cover up the fun under a smudge of Latinity. The egg-collector is out for a good time, just as the sportsman is, or the camerist, or the opera-glass naturalist (may his, or her, tribe increase!). But because the pursuit of certain ends is fascinating or enjoyable in itself, it does not necessarily follow that those ends are frivolous. Even though we grant that some egg-collectors have looked upon their trophies much as they might upon so many buttons or marbles or medals, it still remains true that oölogy has been the wet-nurse of ornithologists. Her stimulations, her youthful ardors, her ecstasies, her revelations, her hard-won trophies, have given us such men as Newton, Coues, Baird, Merriam, and Ridgway, all peers of the realm in Science; besides an innumerable host of honored names, Nelson, Bendire, Goss, Brewster, Fisher, Grinnell, Mailliard, Dresser, Rothschild, Sclater, Hume, Seeborn, Tristram,—to mention only a few at haphazard. These men fed on birds' eggs, and howsoever they may have turned to other meat in later years, they owe the very fashion of their scientific manhood to such youthful fare. That the younger ranks of ornithology are deplorably thin at present is due, I solemnly believe, in large measure to the diffusion of a deadly gas, a compound of misapprehension, intolerance, and suspicion, which has choked the avenues of youth's wholesome activities.

Moreover, the real task of oölogy is only well begun. Extensive material has been assembled, but we have only begun to realize that in the egg, as measured by its external characters, we have the most stable, or conservative, element in the interpretation of the ancestral history of the bird. In comparative oölogy we have a sharp, a still almost unused, instrument of attack in the

dissecting out of tangled phylogenetic relationships. Indeed, it is scarcely too much to say that if all birds were destroyed, and we had their eggs at hand, we could make a passable reconstruction of their phylogenetic tree. Instead of being a school-boy's fancy, Oölogy is a science, as well prepared to give account of herself as is geology or archaeology or ballistics. That you are in a position to do Science a good turn, and that without prejudice to any other human interest, is my firm conviction. I congratulate you, and I congratulate Californian ornithology.

Cordially yours,

W. LEON DAWSON.

Santa Barbara, California, June 11, 1915.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

JUNE.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, June 24, 1915, with President Law in the chair, and the following members present: Mrs. Husher, and Messrs. Brown, Chambers, Colburn, Daggett, Edwards, Hegner, Holland, Howell, Rich, Swarth, Wood, and Wyman. Visitors in attendance were: Mrs. Law, Mrs. Wood, and Mr. Ralph Benton.

The minutes of the May meeting were read and approved. One new member was elected, Mr. R. D. Lusk, of Winkelman, Arizona. New names presented were: Miss Nellie Moore, Long Beach, and Miss Laura I. Dodge, Long Beach, both proposed by C. B. Linton; Mrs. J. E. Law, Hollywood, by F. S. Daggett; Ralph Benton, Los Angeles, by W. Lee Chambers; Lance H. Smith, Palo Alto, by Joseph Mailliard; E. A. White, Santa Paula, by H. F. Duprey; F. W. Henshaw, San Francisco, by J. Grinnell; Mrs. Mary Van E. Ferguson, Berkeley, by Mrs. James T. Allen.

A communication was read, received from the Secretary of the Pacific Division, American Association for the Advancement of Science, asking that two members of the Cooper Club be delegated as representatives of the Club upon the Affiliation Committee of the Pacific Division. Mr. Law was selected to act for the Southern Division, together with whomever might be chosen from the Northern Division.

Mr. Colburn exhibited a series of photographs taken on a recent trip to the Coronado Islands, and Mr. Hegner showed photographs of birds and nests taken in the

vicinity of Los Angeles. Mr. H. A. Edwards outlined a plan for placing signs relative to bird protection at the several camps and resorts in the nearby mountains. He exhibited a sample signboard, and asked the Club for its support in carrying out the project. The plan was strongly endorsed by those present, and a discussion followed as to the best way of forwarding the work. Adjourned.—H. S. SWARTH, *Secretary*.

JULY.—The regular monthly meeting was held at the Museum of History, Science and Art, Thursday evening, July 29, 1915. President Law was in the chair, and the following members were present: Mrs. Husher, Mrs. Law, and Messrs. Brown, Colburn, Daggett, Holland, Nokes, Rich, Robertson, and Swarth. Mr. Wade E. Enoch was a visitor.

The minutes of the June meeting were read and approved. New members were elected as follows: Mrs. Mary Van E. Ferguson, F. W. Henshaw, E. A. White, L. H. Smith, Ralph Benton, Mrs. J. E. Law, Miss Laura I. Dodge, and Miss Nellie Moore. New names presented for membership were: S. D. Moles, Claremont, California, proposed by W. P. Taylor, and Wade L. Enoch, Tropico, California, proposed by W. Lee Chambers.

The following proposal for honorary membership was then read, and favorably acted upon by unanimous vote of those present:

To the Cooper Ornithological Club:

We, the undersigned active members, propose for honorary membership in the Cooper Ornithological Club, Mr. Henry W. Henshaw, Chief of the Bureau of Biological Survey, Washington, D. C. We believe that this recognition of Mr. Henshaw's long service to ornithology is wholly merited. He is one of the oldest living pioneer ornithologists of the west. His field work, and publications based thereon, which appeared in the seventies, remain standards of accurate accomplishment. Some of the areas explored by Mr. Henshaw have never been reported upon ornithologically since. Because of his identification with the development of western ornithology, and because of his continued activity, undiminished at the present time, we believe him to be a proper candidate for honorary membership.

Respectfully submitted,
(Signed)

J. Grinnell,
W. Lee Chambers,
Frank S. Daggett,
Harry S. Swarth.

July 15, 1915.

Dr. Nokes exhibited a skin of the Scissor-tailed Flycatcher recently collected by himself in Los Angeles County. Some discussion followed as to possible ways for the bird to have wandered such a distance from its normal range. Adjourned.—H. S. SWARTH, *Secretary*.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

TO EXCHANGE—*Auk*, vol. 22 (1905), in clean numbers for any vol. *Auk* in similar condition except vols. 16 (1899) to 26 (1909) inclusive.—B. F. CASE, *Tolland, Conn.*

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WANTED—Copies of any of the following publications. Nidologist, vol. 1, no. 2, Oct., 1893; Osprey, N. S., 1902, March, April and July; Oologist, May and December, 1897, April and September, 1899; Wilson Bull., no. 4, 1894.—B. H. SWALES, *Grosse Isle, Mich.*

I WANT one copy each of "The Blue Bird", vol. 6, nos. 1 and 2, published at Cincinnati, Ohio; edited by Dr. Eugene Swope.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

FOR SALE or EXCHANGE—Premo Camera, full outfit, 4x5, in A1 condition; collections of marine and fresh-water shells, 2000 species, 5000 specimens; of minerals, 275 specimens; of fossils, 250 specimens; 70 glass mounts; 216 moths and butterflies; 6-foot mounted alligator; a large list of curios; a collection of old French letters and parchments, dates 1427 to 1800, two signed by Louis xv. Will sell any or all of above for cash, or exchange for sets of birds eggs, mounted birds, bird skins, Indian stone relics, books or magazines.—H. F. DUPREY, *Dixon, Calif.*

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A Magazine of Western
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Volume XVII November-December, 1915 Number 6



COOPER ORNITHOLOGICAL CLUB

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THE YELLOW-BILLED LOON: A PROBLEM IN MIGRATION

By WELLS W. COOKE

THE MIGRATION route of the Yellow-billed Loon (*Gavia adamsi*) is probably the most incomprehensible problem of migration on the North American continent. The species breeds on the Arctic coast from Franklin Bay, just east of the mouth of the Mackenzie River, along the whole of the Arctic coast of Alaska, and on the Siberian side west certainly to the Chukchi Peninsula and probably to the mouth of the Kolyma River.

The only place where the species has been found in numbers during the winter season is on the coast of Norway. Here, on the northwest coast in the neighborhood of Tromsø, it was common the winters of 1892-3 and 1893-4, and many specimens were taken from September to January. It also ranged along the whole west coast even to the southern end. In addition it is known in winter in Japan and China and as a rare spring and fall migrant around the Sea of Okhotsk. It is unknown in winter anywhere in the Western Hemisphere and there are no records of its occurrence in this half of the world between November and May. It is known to breed in the Mackenzie Valley along the seacoast, and during the summer visits Great Slave Lake, arriving at the western end in May and being present at the eastern end until late October. It is common here in August and early September, and is still more common on Clinton-Colden and Aylmer lakes. The problem is as to whence come the early May birds and whither go the late fall birds.

Since the species is unknown anywhere in the Western Hemisphere in winter, it follows that the breeding birds of the Mackenzie coast winter somewhere in the Eastern Hemisphere, presumably in Japan and China, though the numbers reported from anywhere in eastern Asia in the winter are very small compared with the multitudes recorded throughout the great extent of the summer home. Apparently the real winter home of the great bulk of the species has not yet been discovered.

But assuming that the winter home is somewhere in eastern Asia, then the birds in spring must go on the Asiatic side to the Arctic Ocean and then eastward

to the Arctic coast of Alaska. The earliest birds were noted at Point Barrow May 15, 1882, and May 25, 1883. But already by this date the species has appeared on the Mackenzie near the mouth of the Liard. By what route do these birds reach their destination? They do not come from the south, for the species is unknown in southern Canada at any time of the year. The nearest part of the Pacific Ocean is to the southwest near Sitka, but the birds do not come by that route, for the birds of this part of the country have been closely watched for several years, and the only spring record of the Yellow-billed Loon is that of a straggler seen on Admiralty Island May 25, 1911.

They do not come up the valley of the Yukon, for this species is not known anywhere in the interior of Alaska. The only possibility left is that they come from the Arctic Ocean to the northward. But all the lakes between Great Slave Lake and the Arctic Ocean are still covered with ice and so is the delta of the Mackenzie River. Thus apparently the only solution of the problem is a migration at a single flight from the open waters of the Arctic Ocean across 700 miles of frozen country to the open water near Great Slave Lake. This supposition also requires that the birds pass Point Barrow off-shore many days before they were noted at that place. Thus the spring route from eastern Asia would be first a 2000 mile trip *northeast* to Bering Strait, then 500 miles still *northeast* to round Point Barrow, then 500 miles east to the coast of Mackenzie, and then finally 700 miles *south*—in the spring—to Great Slave Lake. Truly a most remarkable route, but who will suggest a route more plausible?

The route is apparently reversed in the fall. The species is common on Great Slave Lake until the middle of September, and Sir John Franklin says that near there at Fort Enterprise this species was the last water bird to leave, October 26, 1820. By this time the smaller lakes and streams were closed by the ice, but there would still remain enough open water in the larger lakes and the Mackenzie River for the birds to work their way *north* in the early winter the 700 miles to the open Polar Sea. Then there would still remain a 3000 mile trip to their winter home and they would be passing Point Barrow in November weeks after the last of the birds which nested there had disappeared, for the latest fall date at this place is September 25, 1897. And so this article closes with a reiteration of the opening paragraph: The migration route of the Yellow-billed Loons which visit Great Slave Lake is the most incomprehensible problem of migration on the North American continent.

Washington, D. C., August 18, 1915.

NOTES ON THE NESTING OF THE WHITE-TAILED PTARMIGAN IN COLORADO

By W. C. BRADBURY

WITH FIVE PHOTOS

ON MAY 7th of this year (1915) I sent out a party of four young men, with team, camera, camping outfit and equipment, for the purpose of collecting the rarer varieties of eggs and birds nesting at high altitudes, this in the interests of the Colorado Museum of Natural History, Denver. Commencing at the foot-hills near Morrison, Colorado (altitude 5750 feet above sea-

level), the party worked steadily upward until they reached, on June 10, St. Mary's Lake, a small body of water at the foot of a glacier in Clear Creek County (altitude about 10,800 feet). Here camp was located to allow of hunting for the White-tailed Ptarmigan (*Lagopus leucurus*), Leucosticte, Pipit, and other species nesting at and above timber-line (at this point, about 11,000 feet altitude), and for the Kinglet, Hermit Thrush, and other species nesting shortly below timber-line. The party spent several days, prior to my arrival there on June 20, in a fruitless search for nests of the ptarmigan, although daily seeing more or less of the birds.

Owing to this location being adjacent to some of the oldest mining centers in the state, the birds are scarce; but mining friends having reported seeing a few months previously several flocks in the full white winter plumage, I selected this site for work. This was desirable also on account of accessibility, we being



Fig. 71. NESTING GROUND OF WHITE-TAILED PTARMIGAN, AT 11500 FEET ALTITUDE IN CLEAR CREEK COUNTY, COLORADO; NEST AND EGGS TAKEN NEAR HERE JUNE 26, 1915. ROCK-PILE IN BACKGROUND FREQUENTED BY BROWN-CAPPED ROSY FINCHES.

able to get by wagon nearly to the camp site above referred to.

Immediately upon my arrival we devoted our entire attention to search for ptarmigan nests, as neither our museum nor myself had a representation of the eggs of this species. As these birds do not nest in this state below timber-line, our easiest approach to their nesting grounds was by foot up a glacier approximately a mile long, which landed us upon a wide expanse of comparatively flat, rolling ground, terminating at the base of James Peak and Mount Banerfoot, and covered with the short grass and other scrubby plant growth peculiar to that altitude. Much of this tract was still covered with snow, and the balance mostly wet and sloppy from the melting drifts, thus making it necessary to wear rubber or other water-proof boots.

Being but little conversant with the nesting habits of these birds, we nat-

usually first directed our search to the sloping hillsides from which the snow had vanished. The ground here was comparatively dry and well covered in places with large and small boulders, and with better grass and vegetable covering for nest sites.

The first day we saw seven ptarmigan, three pairs and a single cock. We searched diligently for their nests until about three p. m., when we repaired to a large pile of jagged rocks and boulders standing out in the open ground, altitude about 11,700 feet (see fig. 71), where on two previous occasions my assistants had seen a pair of Brown-capped Rosy Finches (*Leucosticte australis*) and had spent an hour or two each time in unsuccessful waiting, watching and searching for their nest. Finding the male bird present and the female shortly appearing, I decided to make another thorough search, which we did, scattering



Fig. 72. MALE WHITE-TAILED PTARMIGAN PHOTOGRAPHED NEAR THE NEST, JUNE 21, 1915.

our forces systematically, and as thoroughly as possible investigating the openings, with flash-lights and otherwise, for a couple of hours, but with no better results.

On our arrival there we noticed a pair of ptarmigan not over forty to fifty yards from us in the open, paddling around in the wet sloppy grass and water, and I told my associates to keep an occasional eye on them while we completed our leucosticte search. This being finished we turned our attention to the ptarmigan, which had not moved over fifty feet during the two hours, but only the cock was in sight. We all scattered out in search for the hen, devoting our attention mostly to the adjacent comparatively dry spots. We knew she had not flown and yet we were unable to locate her. This was aggravating, and we

came together for a conference; and while discussing the matter Olson broke out laughing and pointed down to the ground, where, within six feet of me and not ten feet distant from any one of us, was the bird resting down flat in the grass. I supposed she was simply crouching and hiding, as I had seen them do before, there being nothing to suggest a nest. Telling the boys to stand still where they were, I approached her cautiously from behind and inserted my hand beneath her, at which she ruffled, scolded, turned her head and peeked my hand several times. Raising her sufficiently from the nest to look beneath I discovered two eggs lying there in water. I then let her gently back on to the nest, she still clucking and peeking at me, my hand being wet from contact with her.

It being wet, sloppy ground all about, water in the nest, and melting snow within fifteen or twenty feet, the conditions surprised me, and I remarked to the boys that, barring the altitude, it was more suitable ground for the nest of a grebe or Black Tern than for a ptarmigan. I then had Durand prepare his camera and photograph her on the nest (see fig. 73). I then lifted her, on my hand, out of the nest and placed her down within a foot of it, she still scolding and peeking my hand, and he again photographed her and nest (see fig. 74, showing the eggs lying in about a half-inch of snow water). He then photographed the cock (see fig. 72), which was and had been during all this time not over twenty feet distant from us and the hen and nest. We then left the birds, and repaired to camp some one and a half miles distant, hunting over the bare ground en route, with no other results than a couple of pipit nests.

The next morning, June 22, we were off at seven o'clock, with lunches, glasses, etc., taking no camera, as Durand had previous to my arrival secured a good series of ptarmigan photos, covering the same ground as on the previous day, with much additional territory, but, though we located some six or eight pairs of ptarmigan and two single cocks, we failed to discover another nest.

On our return trip, we visited the site of yesterday's find and, though the ptarmigan were not in sight, I told the boys to watch for the leucosticte while I inspected the ptarmigan nest, which I had yesterday marked carefully with a small pile of stones on a flat rock, with a tag marked "15 feet due west." Notwithstanding this, a five minutes search did not reveal the nest, at which I called the boys down. They came, laughing, to where I was and stood looking in amazement for a moment, when Olson said "Why, it was right beside that stone your foot is on!" A closer search with the aid of the fingers revealed the nest, lightly covered with dead grass that obscured the eggs, and looking exactly similar to, and indistinguishable from, a dozen other barren spots the size of one's hand, or larger, over which the wind had blown a light fluffy deposit of dead grass. An examination disclosed the two eggs, only, still lying about half submerged in snow water. Leaving the cover as nearly as possible as found, we departed for camp.

On the way to camp, I decided on the following plan, which I unfolded to the boys after supper and instructed them to carry out the next morning. Each was to roll up some of his bedding and canvas for sleeping purposes and take sufficient food for four meals, together with such other appliances necessary (omitting cameras and other heavy stuff) to prepare him for stopping over night; leave the glacier about two-thirds the way up, for the first promising ground, then scatter out and, as soon as a bird or pair of birds were found, Durand, who was in charge, should leave Olson with the bird or birds and have him not lose sight of them under any circumstances until it was too dark for him to see; then he should camp right there with the bird or birds until morning

and at dawn relocate them before breakfasting, and continue that careful watch until the following night, unless in the mean time he tracked the female bird to the nest. Durand and the other man, Barton, were to pursue exactly the same tactics when they located further birds.

This plan was followed out on Wednesday, June 23, but being personally under the weather that day I did not accompany them, but promised to and did follow them up the next morning. The results were as follows: In the morning near the head of the glacier they first found a cock bird in approximately the same spot we had once before seen him, and, on another occasion, had seen a pair together but had failed to find their nest. Durand, feeling somewhat irritated at this, deviated from my instructions to leave one man, to the extent of all three of them stopping, unloading their outfits, receding a hundred or so yards and there separating fifteen or twenty feet apart and thoroughly combing the ground again well up the slope of the comparatively steep hill on one side, which was bare of snow, down to the glacier on the other side and continuing this for approximately two hundred yards up the gulch beyond



Fig. 73. FEMALE WHITE-TAILED PTARMIGAN UPON HER NEST; PHOTOGRAPHED JUNE 21, 1915.

where the male bird was discovered and still remained; this, however, without results. They then came together to discuss further methods and while so doing, as on the previous occasion, one of them pointed down to the female bird, within six or eight feet of where they stood, on the nest, and upon raising her by inserting the hand beneath her from behind disclosed five eggs. This nest, located alongside a jagged rock about two feet high, was but a bare pretense for one, with just a trifle of dry grass and six or eight feathers of the bird in the bottom, and a small bunch of dry grass pushed to one side, with which to cover the eggs when she left them. The bird was replaced and left on the nest.

On following the party up next morning, I first found Olson, about a mile beyond the nest just described, lying on his blankets and watching a pair of ptarmigan which he had located about noon of the previous day and camped with as instructed. After lying down and talking with him awhile, he having told me of seeing, while watching the pair, several ptarmigan fly across a gulch below him just before dark the previous evening and also shortly after daylight

that morning, I instructed him to go and prospect that gulch, which we had not previously worked, and I would stand watch on his birds. This I did for about two hours, during which time they were never more than twenty-five to forty yards from me. I carefully avoided going near enough to disturb them and they did not move out of a radius of more than twenty yards, occasionally moving around very slowly, picking buds from small scrub bushes a foot to eighteen inches in height, then lying down just behind a rock or under the edge of a bush, generally on the opposite side from me. At times I carefully walked around to make sure they had not sneaked off, and found them crouched down apparently asleep or resting. Finally they slowly walked over a very slight rise in the ground, about forty yards distant, and disappeared. Immediately

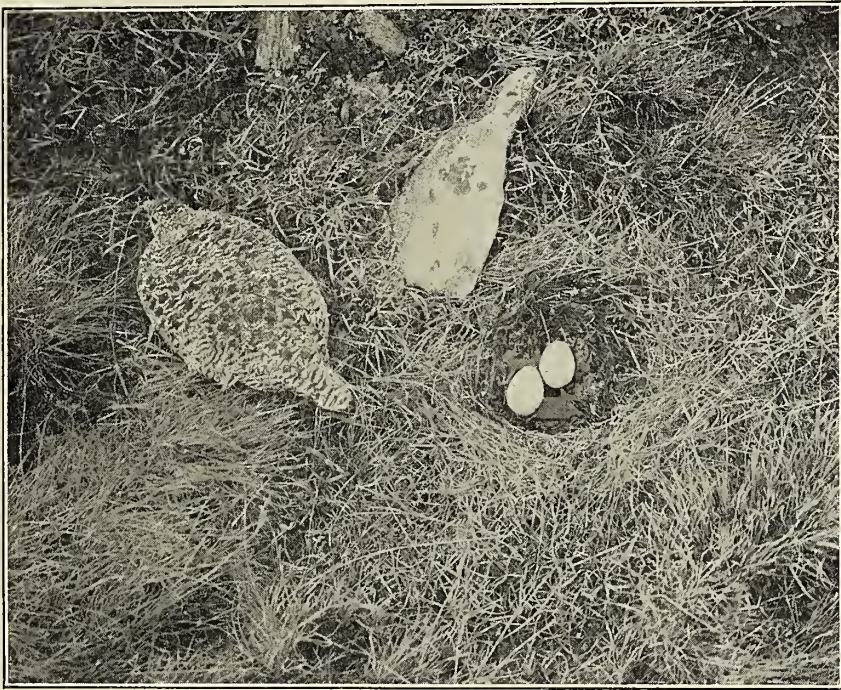


Fig. 74. THE WHITE-TAILED PTARMIGAN SHOWN IN PRECEDING PICTURE HAS BEEN LIFTED FROM HER NEST BY HAND, DISCLOSING THE TWO EGGS LYING IN HALF AN INCH OF SNOW WATER; PHOTOGRAPHED JUNE 21, 1915.

leaving my blankets I deliberately walked over to ensure not losing sight of them, but, although they had not been out of my sight two minutes, was unable to find them. I unavailingly scoured the ground for a half hour. I know absolutely that they did not fly; there was no shelter for them except the very slight ridge that extended up for one or two hundred feet, and an occasional small patch of from one to four or five square yards of the short bush referred to, and a few projecting rocks, all of which were thoroughly prospected.

About this time Olson returned and joined me in the search, but we found no sign of the birds. He then told me that in the case of the first pair he located and camped with the previous day, after finding the nest with the five eggs, he had had exactly the same experience, except that after they disappeared he

hurried to get in sight of them again and saw them streaking it out, running like a pair of wild turkeys, until seeing him when they took wing.

The next pair of birds was located by Durand and Barton near Stuart Lake, a small artificial reservoir in a cañon at the head of a fork of Fall River (altitude 11,400 feet), on rough rocky ground. This pair we had seen in the same place before.

The following are extracts from Barton's notes: "Located birds about 2 P. M. near patch of bushes, and I sat down near by; they paid no attention; would sit down awhile and then feed, scratching about roots, grass and plants. Hen paid little attention, but cock, generally between me and hen, always on lookout and occasionally flew short distance, soon returning; both birds would at times lie down in puddles of snow water and pant with heat, while I was cold. About dusk (8 o'clock) they were more restless. At daylight next morning they were where I left them at dusk the night previous. Started feeding about 9 o'clock and would feed up to within a few feet of where I lay on rock. While eating lunch, and at other times when lying down, threw scraps of bread to them, which they would pick up and eat, at times within a few feet of my feet. At times cock would reply to calls of another cock on hillside; at other times would not answer. Was with them until I had to start for camp, about 4 P. M., during which time, since located at noon of day previous, they had moved in radius of only a hundred or two feet."

A third pair of birds was located by Durand about 2:30 o'clock on a small knoll a short distance up the cañon above Barton, and I quote from Durand's notes regarding the same: "After locating birds, having left my blankets and outfit with Olson, I went back a mile and a half and got them, returning at about 3:30 o'clock. Found the birds just where I left them. Although I was chilly, the birds were sitting about panting, occasionally crawling or slowly moving about. Toward evening birds began feeding. I had to build a fire to keep warm. About 7:45 o'clock (nearly dark) they seemed more restless and suddenly started to run (didn't believe it possible they could run so fast) up steep bank of snow, to wall of rocks where they disappeared. Next morning they were back to foot of snow bank. Watched them until 4 o'clock P. M.; behaved same as day before. No nest."

On returning to camp we visited the nest discovered Monday with two eggs in it, and it now contained four; we also visited the nest found on Wednesday and it now contained seven eggs; both birds being on the nests, they were raised by hand sufficiently for the purpose of inspection and then left undisturbed.

The following day, Friday, we did not visit the ptarmigan ground, but went to an opposite ridge at a lower altitude in search of Kinglet, Hermit Thrush and other nests located, in course of construction or with incomplete clutches, about a week previous, and of such other specimens as we might find.

The next day, Saturday, we repaired again to the ptarmigan ground, first visiting the site of the nest left with the seven eggs in it, only to find the bird and eggs gone. I at first charged it up to either a fox or weasel, but upon second thought had to abandon that idea, there being about the nest no signs of broken eggs, nor parts of egg shells, nor any feathers indicating that the bird had been eaten or in a struggle. A further examination disclosed the tracks of two men, who had come up the glacier the day previous, leaving the same at an angle heading directly for the nest, which was not over thirty feet distant from the edge of

the snow and their tracks in it. I did not know who they were, but could they have heard my remarks regarding them, we should doubtless have become much better acquainted.

From here we proceeded, in a disgusted mood, to the other nest in which we had left four eggs, and finding the bird on the nest, presumably laying an egg, left it undisturbed. Returning toward evening, after a further fruitless search, I found the bird still on the nest, and after thinking the matter over and deciding that I might, between foxes, weasels and bipeds, lose that set also, I took both the bird and the eggs (now five) from the nest, which was now nearly dry.

In preparing the skin of the bird that evening, we carefully examined the

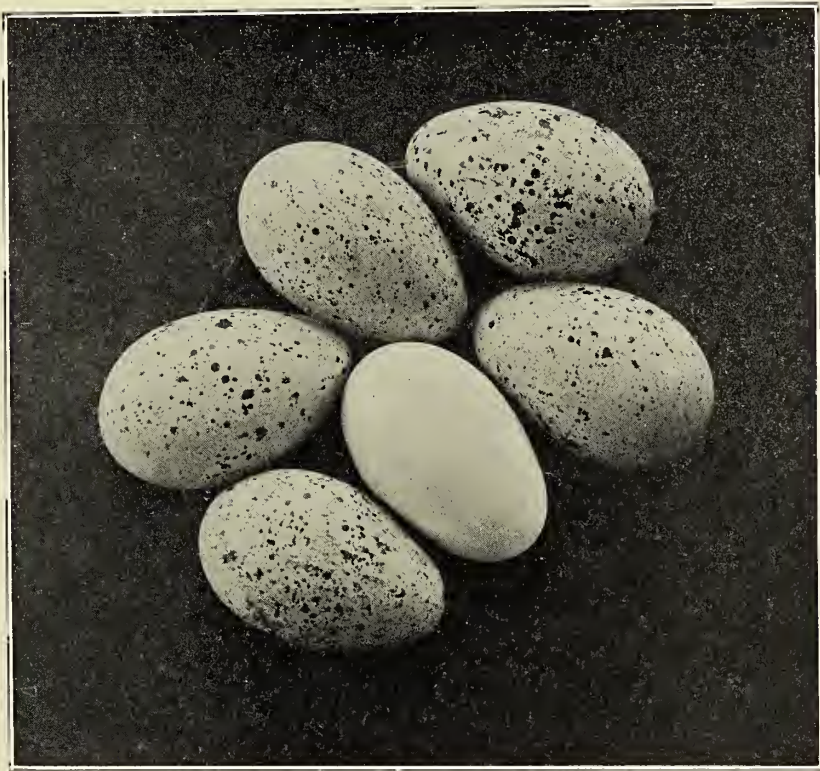


Fig. 75. EGGS OF WHITE-TAILED PTARMIGAN, THE FIVE SPOTTED ONES TAKEN FROM THE NEST, THE UNMARKED ONE FROM THE OVIDUCT OF THE BIRD CAPTURED ON THE NEST.

ovary and oviduct which contained six eggs ranging from the size of a bean to practically a full sized egg.

The measurements in inches of the five eggs taken from the nest were: 1.73x1.15, 1.72x1.15, 1.72x1.13, 1.75x1.13, 1.72x1.15.

The measurements of the egg taken from the oviduct were slightly less, being 1.70x1.10, with no perceptible difference in thickness or firmness of shell; but what impressed me as unusual was the fact that this egg was pure white, with no indication of any markings whatever, whereas the five eggs taken from the nest, notwithstanding the fact that much of the time they had been partly immersed in water, some of them for nearly a week, were all uniformly and nor-

mally marked (see fig. 75). This raised the question in my mind as to when and at what stage the pigment is deposited on the shell, and I would be pleased to be enlightened by some one more versed in the matter than myself.

The bird had deposited only three eggs in the nest during a period of five days, and either it was on the nest at the time taken, for the purpose of depositing this white egg, or else resting after having laid her fifth egg; in the latter case she had laid but one egg in three days.

The only other records I have of nesting dates of this species are those of Carter (deceased) of Breckenridge, Colorado, and are as follows: June 17, 6 eggs; June 27, 5 eggs; July 2, 6 eggs; July 6, 6 eggs.

Although more or less familiar with these birds for the past thirty years (though I never before searched for their nests), I never saw one run or move on ground faster than a turtle, or before heard of it.

I am convinced the finding of a nest, unless the bird is on it, would be pure accident. That if they build, or line, any systematic nest it is done as with many species of ducks, i. e., while they are laying their clutch and during the incubation of same.

The moulting of the females was much farther advanced than that of the males. The males always appeared more on the alert than the females (compare the photos). The moulting had made marked advancement between June 11 and 21.

Having always considered the ptarmigan the champion fool of all land birds, relying almost solely on its protective coloration and slow movements for safety, it maintained this reputation with me in all the preliminaries of this trip, but when it came to the finals in matters of nidification and the perpetuation of its species it created an admiration for its tact and ability in outwitting us in fine shape; but I am in hopes of getting the resultant grouch out of my system during the next nesting season.

Being taken seriously ill on Sunday, I had to be quickly removed to a lower altitude for treatment, and on instructions the boys broke camp and followed me the next day.

Denver, Colorado, October 12, 1915.

CHARACTERISTIC BIRDS OF THE DAKOTA PRAIRIES

II. ALONG THE LAKE BORDERS

By FLORENCE MERRIAM BAILEY

THE BIRDS of the prairie region include not only those of the open grassland, such as Prairie Chickens, Upland Plover, Short-eared Owls, and Bobolinks, but also those of the brush patches and timbered borders of the numerous prairie lakes, together with those that frequent the sloughs and marshes and the lakes themselves.

The Stump Lake wheat farm where I spent part of the summer was east of the hundredth meridian, but its proximity to the arid regions was attested by the alkaline water of the lake and lines of frothy suds along its shores, while partly buried but well preserved bones of buffalo that had come to water from the surrounding prairie were to be picked up along the beaches. In the first

excitement of hearing Western Meadow-larks and watching Sharp-tailed Grouse in the potato patch, and those arctic breeders, the White-winged Scoters out on the lake, I found myself hoping for old western friends and new and interesting strangers; and, slow to give full weight to the fact that we were east of the hundredth meridian, was loth to acknowledge that the four birds whose songs were most continually in our ears at the farmhouse were domestic eastern friends—the Baltimore Oriole, Rose-breasted Grosbeak, Warbling Vireo, and House Wren.

These, like all the other tree-nesting birds of the treeless prairie region, of necessity gathered in the hardwood lake borders, but some of the species would normally have nested not in thick woods but in isolated trees in the open. The song of the Baltimore Oriole like that of the Warbling Vireo came not from elms on a lawn but from the edge of the narrow strip of timber between the farmhouse and the lake, among whose trees were old nest holes of the Golden-eye. The Rose-breasted Grosbeak also sang from the oak woods of this compressed nesting area where House Wrens, Catbirds, Thrashers, Cuckoos, Wood Pewees, Mourning Doves, Bluejays, Crows, Nuthatches, Flickers, Downy Woodpeckers, Long-eared Owls, Swainson Hawks, and Ferruginous Rough-legs were congregated.

The owner of the woods took us down to see a Rough-leg's nest that he had been noticing for years in going for his cows. On the way we visited a Long-eared Owl's nest I had been watching and the interested landlord climbed the tree and counted the five white downy young. He also stopped at several old trees with well known holes in them and pounded on the trunk to see if any Golden-eyes were within.

When approaching the Rough-leg's nest we saw one of the great birds launch from the tree-top into the sky, where it circled slowly around as if on guard. Its mate was still standing on the nest, about thirty feet from the ground in an old oak, when we came up below; and it presented a commanding figure mounted on top of its huge nest. When the farmer started to climb the tree the great bird flew and, joining its mate, circled around overhead, but as the man neared its nest it circled near the tree, screaming shrilly. The nest proved to be about six feet high, so high that the farmer could just reach over the edge. He pulled out a partly eaten Richardson ground squirrel and then held up one of the white nestlings for us to see. Overhead the old birds circled around on set wings, the sunset light reddening their breasts and making a beautiful picture. Sometimes one of them rose and circled high in the sky. Three weeks later one of the Rough-legs was seen flying so low that its ferruginous legs, feathered to the feet, showed clearly. The young were still in the nest but almost full grown and fully feathered. The pellets under the tree were composed of ground squirrel fur.

The lordly birds with their huge old nest proved the appropriateness of the name of the farm—Hawk's Rest—for the settlers had shown a rare appreciation of the services of their raptorial friends. Old hawks' nests were found at different places along the shore, and a second Long-eared Owl's nest and a Swainson Hawk's nest were found not far from the Ferruginous Rough-leg's tree. The Swainson's nest which contained three eggs on June 14, on July 6 had three downy young about a week old. A half-eaten Richardson ground squirrel was also in the nest. The Hawk flew and circled around and squealed when the tree was being climbed and the nest photographed.

In the heart of the woods, Purple Martins, whose raucous notes were fre-

quently in our ears, nested in old hollow oaks. It was peculiarly interesting to watch them here, in a site made to seem abnormal by modern usages. They would dart in and out through the dense foliage of the tree tops so fast it was hard to keep track of them; but one nest hole in the cleft of a tall tree I discovered from a hillside above. Its owner, a handsome effervescent young father, went in and out of the nest hole singing as jubilantly as a Bobolink, standing on the edge and singing down into the hole before going in, and on coming up stopping half way out with only glossy head and breast visible, to burst into his wild jubilant song.

While a good many species nested in the timber, there were comparatively few that nested in the brush patches. In the fringe of bushes between the lake shore and the woods a pair of Brown Thrashers—whom I had seen carrying food June 16—ten days later held me up and *smacked* at me till I discovered a stubby-tailed youngster on a branch overhead. Catbirds also probably nested in this fringe of bushes. On its shore edge, under one of the last silver-leaf bushes, on June 18, I flushed a Spotted Sandpiper from her nest with its four ovate eggs all pointing in. The sweet Sandpiper notes, *per'r'r weet, per'r'r weet*, were often heard along the shore, and a loud musical piping song was heard from one circling in over the beach, answered by the ordinary Sandpiper notes down the shore. A pair of Killdeer was also seen and heard along the beach, but they nested apparently in the corn field near the farm house.

In the silver-leaf patches and wild plum thickets back from the shore three birds were especially abundant, the Bronzed Grackle, the Yellow Warbler, and the Clay-colored Sparrow.

The dense thickets of wild plum and spiny thornapple make good shelter for the Grackle colonies with their big nests and large nestlings. When the old males are interviewing visitors to their noisy colonies the visitors have an opportunity to examine the bronze of their plumage. To eyes familiar mainly with museum skins an old male standing on top of the thicket in strong sunlight is almost startling. The bronze of his back while not as yellow as a newly polished brass knocker has the rich glowing quality of burnished bronze—as if each feather saturated in sunlight reflected it from every barbule. The contrast the bronzy back presents to the iridescent green head is also striking. When the young of a Stump Lake colony were being fed, their parents were constantly seen hunting along the lake shore and flying off with full bills, and by the first week in July the woods between the thicket and the lake were full of *Quiscalus* families all talking at once.

Besides the thickets of wild rose, wild plum, and thornapple there were acres of that beautiful bush, the silver-leaf or silver-berry. Sagebrush the silver-leaf is called locally, though the sage of the region is the low *Artemisia frigida*, and the silver-leaf is *Eleagnus argentia*. *Eleagnus* grows head high and over, and its stiff branches with their lovely silver leafage afford safe cover for the gray nests of the Yellow Warbler, the Warbler of the region. Not every bush in the prairie country has its Yellow Warbler, but the flash of yellow and the familiar song are such common experiences that you come to realize the truth of the statement that *aestiva* is filling a gap left by nature and filling it abundantly.

Another bird whose voice is commonly heard in the silver-leaf thickets is the *Spizella* of the prairies, the little Clay-colored Sparrow whose crown when raised looks striped, from its median line, superciliary and line through the eye, and whose white malar streak adds a touch of softness to its plumage. Its call is

an ordinary *tsip*, but its song is individual, a hoarse rasping *kah-kah-kah-kah-kah* that at first surprises and grates on the ear, but as the season waxes comes to be pleasantly associated with the aromatic tang of the blooming silver-leaf, and is peculiarly grateful when several of the little *Spizellas* are answering each other in the bushes.

Two sets of nests were found in June and July. Young were evidently being fed on June 21, for an old bird with bill full of long wings started and flew straight back into the heart of an *argentina* patch. In the second week of July two nests were found, one just completed and one containing eggs. The second of these was beautifully located on the edge of a lake. It was quite hidden until the low plants were parted, when a small cup containing three lightly wreathed blue eggs was disclosed lying on the glossy fern-like leaves of a *cinquefoil*. When examined closely it proved to be made of grass stems and lined with horse-hair.

While the Clay-colored Sparrow and the Yellow Warbler were the two most abundant birds of the silver-leaf, they were not its only inhabitants. On the edge of a patch near the farm a pair of Marsh Hawks hid their nest and valiantly fought their windmills in the form of a perfectly harmless bird student. When I was going to photograph the young, with the assistance of two other women, as we pushed our way through an especially high stand of *argentina*, a female Mallard burst from her nest in the thicket just ahead of us. We pressed eagerly on to examine it. Twelve eggs lay in the nest, encircled by a high rim of down, and five of them, as the keen eyes of the women from the farm detected, had already been pipped. The old Duck was needed at home now; we must not keep her away. One of the women quickly twisted some green leaves around a gray bush top for marker, while I noted a north and south line from the farm windmill to a tree on the Marsh Hawk slope, and an intersecting east-and-west line marked by wild plum bushes, after which we hurried away to let the old Duck return to hatch out her brood.

But though we left the neighborhood as fast as impeding bushes would permit, the anxious Duck instead of returning to the nest flew out and began to make wide circles around and around us. As she crossed the sky ahead of us with outstretched level head and neck we could see not only her mottled body but white-bordered blackish tail, and at a glint of light caught the violet of her speculum between its white borders. Before we reached the Hawk's nest, when the Duck had completely encircled us five or six times, we interfered with her orbit. Instead of changing it she started back on her track. She was then headed toward the lake, and as if an idea had suddenly occurred to her, made a slight detour and went down to it. When she returned a few moments later she was accompanied by her mate. Together they flew completely around us—we could see his long green head and neck as he passed in front of us—and then as if reassured by his presence or the result of his inspection, or, perhaps, on the decoy principle trusting to his presence to draw our fire, when their circle reached the nest she dropped down to it and he calmly flew off back to the lake.

Whatever it was that she had brought him for, it was a pretty conjugal episode. But as we were moralizing upon it—up rose this Elsa, her Lohengrin being gone, and to satisfy herself more fully proceeded to circle around us once more! By this time, however, our absorption in our task of photographing the Hawks' nest was so reassuringly obvious that even the doubting Elsa seemed satisfied, for she came no more. Presumably she returned to the nest, but we

could not prove it, for when we left we made a wide detour to avoid driving her from her emerging ducklings.

The next day during the first drops of a thunderstorm we hurried down for a look at the nest. This time the mother, instead of bursting out of the patch and flying off, flew low through the bushes, apparently dragging her wings. She might well use her best methods to decoy away intruders, for all but two of her eggs had now hatched. As we leaned eagerly over the nest a hat-full of downy yellow ducklings huddled back under the bushes. We had barely time to notice their brown eye streaks, ducklike bills, and streaked backs, when the storm burst, and descending rain and hail drove us back to the farmhouse.

Two days later, when we went down with the camera, only one egg and a few bits of shell remained in the nest. Our ducklings had gone! They had doubtless been spirited away to some safe harbor, but find them I could not. The parents—if it were they—I did see later, on the beach. Close to the water sat the duck, bill over back, apparently napping, while the drake kept watch. He lay at his ease on his side when discovered, but afterwards sat up on his feet like a more proper guardian, occasionally moving his handsome green head observantly. When his sleeping mate woke she flew off into the lake and he followed, after which they swam around side by side as serenely as if there had never been an Elsa and Lohengrin episode!

Washington, D. C., May 23, 1915.

A CONVENIENT COLLECTING GUN

By LOYE HOLMES MILLER

WITH ONE PHOTO

THE MAN with questionable standards in the matter of Sunday observance or of conformance to public park regulations is not the only man who may be interested in a collecting pistol. Despite the implied shadow upon his reputation, the writer asserts that he has found a collecting pistol an extremely useful weapon. The field trip of other than ornithological nature, where a twenty-eight inch gun barrel would be out of the question; the one hand-bag journey when nothing bigger than a holster gun can be crowded in; the country walk where one may be well within the law of both church and state, and yet not wish to be made conspicuous by a full-grown shot gun; the expedition after lizards;—these are all occasions upon which the collecting pistol has served the writer well. It has added many valuable specimens to his collection and has established one record for the region west of the Rockies.

My experiments began in the high school days, when an old Colt's navy revolver was bored out smoothe, carried to school in a clarinet case, and used on the way as a bird-call. The path to school was four miles long.

This rather heavy ordnance was later supplanted by an old Smith and Wesson pocket revolver with ten inches of brass tubing thrust down its throat and sweated in with soft solder. The most effective weapon, for its size, is the one now used and which forms the subject of this note.

A Colt, .38 calibre, Police Positive Special revolver forms the basis of the

arm. From this gun the rifled barrel was unscrewed and packed away in vase-line. An eight-inch, smooth-bored, full-choked barrel of lighter weight was screwed into place. The very neat bit of work was done by Mr. W. H. Wilshire of Cline & Cline Co., Los Angeles, California. The result is a light and handy weapon, easily carried in a belt holster, which will chamber a special, long shell. The shells are loaded and reloaded indefinitely according to the following formula: Three grains Ballistite carefully measured, one felt wad $\frac{1}{8}$ -inch thick, nearly fill with shot and cover with card wad, dip in paraffin.

With the above charge of dust shot, the gun was targeted at forty feet from the muzzle (see fig. 76). The shot was remarkably uniformly distrib-

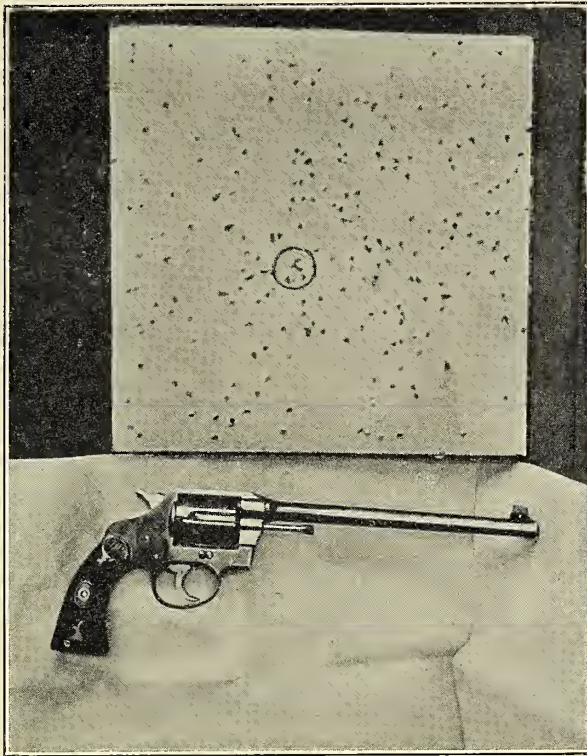


Fig. 76. COLLECTING PISTOL, AND CARDBOARD TARGET FROM THE REVERSE SIDE. DUST-SHOT OVER THREE GRAINS BALLISTITE, AT FORTY FEET. THE SMALL CIRCLE IS ONE INCH IN DIAMETER AND WAS PENETRATED BY FOUR PELLETS.

uted and 83 percent of the charge was placed within a circle of fifteen inches diameter. Dust shot penetrated twenty-five sheets of napkin tissue paper. With no. 9 shot the penetration was sixty-one sheets of paper.

With this arm the writer has collected Spotted Owl, Long-eared Owl, Cooper Hawk, Mountain Quail, Hybrid Flicker, many smaller woodpeckers, and some hundreds of smaller birds. In addition to birds, ground squirrels, chipmunks, lizards and snakes have been taken. The herpetologist needs no other arm.

Of course if you are going on a regular collecting expedition, take a

double-barreled shot gun, an auxilliary, and a rifle if you can, but many of us cannot go on expeditions. To the one who travels "light", this brief discussion is addressed.

I am indebted to Dr. J. Grinnell and to Mr. Joseph Dixon for advice on the use of Ballistite.

Los Angeles, California.

FURTHER REMARKS UPON THE KERN RED-WING

By JOSEPH MAILLIARD

AS STATED in the description of the Kern Red-wing (*Agelaius phoeniceus aciculatus*) in THE CONDOR, vol. xvii, p. 13, the dates on which the specimens therein mentioned were taken (which were May 27 to June 7) were rather late in the season, and on account of the fading and abrasion of the plumage, which deteriorates rapidly as midsummer approaches, these specimens were not in the best condition for satisfactory comparison with other forms of *Agelaius*. This year (1915), for the purpose of procuring specimens in fresher plumage, a short trip was made by the writer at a somewhat earlier date into that part of the Kern River valley where these birds were found the previous year by A. van Rossem. As it was desirable to avoid the complication of migrations, the latter part of April was chosen as the safest period and a time when migration would be over and local breeding begun.

Dr. Barton W. Evermann, Director of the Museum of the California Academy of Sciences, participated in this expedition, and thanks are due to him not only for his genial companionship but as well for great assistance in procuring specimens, though his main object was botanizing. Specimens of *A. p. aciculatus* were secured on April 17, 18 and 19, and were in much better condition for study and comparison than was the material procured the year before, and from which this form was described.

The study of this new material confirms the conclusions before reached, and also develops the fact that as late as the above dates in April, at least, the middle wing-coverts of the males are apt to have a heavy black tipping. Of twelve males secured eight had all the feathers of the middle wing-coverts tipped with black, some of them quite heavily, three had all but one or two so tipped, while on the remaining specimen the tipping had been worn off on all but two of the feathers. Judging from this, it is reasonable to suppose that still earlier in the spring all the feathers of the middle wing-coverts are tipped with black, and probably rather heavily.

Only twelve males and four females of this form were obtained and among these were no special deviations from the measurements already given in the original description, with the exception of the culmen-from-base of one of the females extending the maximum of this measurement to 24.6 millimeters, in place of the former extreme of 23.9. No minimum extremes were altered by this additional material though the averages of one or two measurements varied slightly from those given in the tables, but not sufficiently to make any practical difference. For instance, the average length of culmen from base in the case of these twelve males is less than that of the twenty-one males

given in the tables, this being caused by a larger proportion of the twelve being under rather than over the average before given, though none fell below the former minimum. On the other hand the average of the same measurement in the four females was greater than that of the eleven females given in the published tables, and the maximum was exceeded. Yet if the two lots had been combined the figures given before would be changed but very slightly. We know that the smaller the number of specimens measured in groups the more the measurements will vary, so this small deviation was to be expected.

These birds were so scarce, and the area in which they were to be found apparently so limited, that it seemed a pity to destroy more than necessary, and what we obtained were enough to sustain the conclusions heretofore reached. Also if this form is as sparsely represented as it appears to be, it seemed unfair for one collector to make so great an inroad into its numbers as to endanger its existence. Hence our weapons were turned away and no more specimens collected.

That the habitat of the Kern Red-wing is extremely limited seems, from our present knowledge, to be a reasonable conclusion, even though it is known to inhabit two districts rather widely separated topographically. The first place where it was found was the "Walker Basin", which is a meadowlike valley of only a few thousand acres in extent, separated from the San Joaquin Valley by a range of mountains over four thousand feet high, its only outlet being by way of a narrow gorge through which the Walker Creek flows into the Kern River, whose bed is at the bottom of a narrow canyon for miles below the point of intersection. The marshy portion of the Walker Basin is so limited that but few individuals exist there. In fact we saw none at all while passing along the edge of this district, but van Rossem took some there in 1914.

As far as we know, the next, and only other, spot where these birds are to be found is on the South Fork of the Kern River, some four or five miles above its junction with the North Fork, twenty-five or thirty miles farther inland than the Walker Basin and separated from it by two fairly high ranges of mountains, the river itself being probably at an elevation at this point of some 3000 feet. Here the narrow valley opens out a bit, to half a mile or more in width, with "fans" covered with desert vegetation running up into the steep canyons that cut into the masses of shattered rock which constitute the mountains on either side. In the comparatively level bottom are small marshy spots and lagunas where bunches of tules or cat-tails grow, while in places water has been brought in from the river and alfalfa or barley is grown.

We found the red-wings mostly in the lagunas, or near them, though some were seen among the hundreds of Brewer Blackbirds (*Euphagus cyanocephalus*) which were following the water as it spread over the fields and feasting on the insects among the alfalfa. The red-wings were usually in small groups or colonies, and far from numerous. In fact we came across but few spots they seemed to favor by their presence. This irrigated strip extends some eight or ten miles up the river to where the valley contracts again and it seems to be the only likely locality in which to expect these birds in all that neighborhood. Inquiry among the ranchers and stockmen living in the valley, the passers-by, and even the indians who are quite numerous there, elicited no information as to any conditions conducive to the presence of red-wings up or down either of the forks of the Kern River, and all who claimed to know

anything of the topography of the country thereabouts asserted that all the valleys were narrow and rocky, with no marshy places nor lagunas of any extent anywhere in those ranges of mountains except just where we were collecting—that is, between Isabella and Onyx, on the South Fork of the Kern.

San Francisco, August 16, 1915.

NESTING OF THE WHITE-TAILED KITE AT SESPE, VENTURA COUNTY, CALIFORNIA

By LAWRENCE PEYTON

WITH TWO PHOTOS

IT WAS in the spring of 1913 that a pair of the beautiful but fast vanishing White-tailed Kites (*Elanus leucurus*) was first seen in this vicinity. My brother Sidney saw the birds carrying sticks to a nest in a eucalyptus tree



Fig. 77. NESTING SITE OF WHITE-TAILED KITE NEAR SESPE, VENTURA COUNTY, CALIFORNIA. ARROW POINTS TOWARDS NEST.

in the willow swamp about three-quarters of a mile east of home. This nest was not completed, however, probably owing to the persecutions of the Crows.

In 1914 a pair of Kites, probably the same ones, were again located in the willow thickets about two miles farther west, but all efforts to find the nest failed, and it was not until this year that our search was rewarded. On April 22, my brother Sidney, while after bluejay's eggs saw a Kite fly from a nest in the top of a small oak tree about one-half mile north of home. On climbing to the nest, which was about 18 feet above the ground, he found it contained three young about a week old and an added egg, which latter he took.

On April 25, while scouting around in the same neighborhood, he located another nest within two hundred yards of the first and also in an oak tree about twenty feet above the ground. This nest contained three small young and a heavily incubated egg. Both of these nests were within a short distance of the Japanese quarters of the Rancho Sespe.

On April 27 another visit was made to both nests. Nest no. 1 was all right; but on climbing to no. 2, the three young were found to have disappeared, although the egg was left. No trace of the young could be found although the old birds were seen later. On May 7 we both made a visit to nest no. 1 to take some photographs (see figs. 77, 78). The young had grown considerably and manifested some uneasiness if we came very close. The nest



Fig. 78. YOUNG WHITE-TAILED KITES IN THE NEST; PHOTOGRAPHED MAY 7, 1915.

contained a considerable quantity of rabbit fur and the entire body of a field mouse. On the morning of May 16 we paid our last visit to the nest. The young were nearly ready to leave and one adventurous youngster did essay a weak flight into a sumac bush about fifty yards distant, where he was caught by a Japanese laborer. After photographing him at close range he was returned to the nest tree.

In the afternoon of this same day my brother found another Kite's nest, partially completed, in the top of a big sycamore three-quarters of a mile east of home. One week later this nest contained four beautifully marked eggs. This was undoubtedly a second set laid by the birds of nest no. 2. Nests nos.

1 and 2 were both fairly substantial platforms of oak twigs lined with weed stems; but nest no. 3 was very flimsily constructed of willow twigs and lined with rootlets.

At no time were the old birds aggressive. They usually left the vicinity of the nest as soon as we came within fifty or sixty yards. The only note we ever heard them utter was a sort of plaintive whistle. One morning, while working near the nest, my brother saw one of the Kites returning from the direction of the river with something in its claws. While still some distance from the nest it began calling and was quickly joined by the other bird. The first bird remained hovering in the air like a Sparrow Hawk, while the other darted up underneath it, took the food from its claws and returned to the nest while the other sailed away.

Sespe, California, August 10, 1915.

ADDITIONAL OBSERVATIONS ON THE BIRDS OF THE LOWER COLORADO VALLEY IN CALIFORNIA

By A. BRAZIER HOWELL and A. VAN ROSSEM

THE FOLLOWING paper is meant to supplement J. Grinnell's "An Account of the Mammals and Birds of the Lower Colorado Valley" (Univ. Calif. Publ. Zool., xii, 1914), and contains only such notes on the birds of the region as would seem to be of especial interest in connection with that publication. The present writers spent from January 13 to 31, 1913, camped on the river bottom of the Colorado, with headquarters some four miles below Potholes, on the California side. It will be recollected that this was immediately after the big freeze of two years ago, and for that reason it is possible that the conditions as we found them did not present altogether a normal aspect. Our work was mostly confined to the arrow-weed association with the intervening patches of cultivated ground, and to the bordering mesquite thickets. Some little collecting, however, was done back in the dry arroyo beds, and in the patches of sahuaros a few miles above Potholes. This general locality presents unusually interesting features and merits much further work on the part of ornithologists, especially in the summer and early fall.

Marila valisineria. Canvas-back. We found this duck to be rather common. Two that were shot on January 21 and 28, respectively, were feeding in an abandoned canal that was thickly surrounded with brush, and in which the water was not over four feet deep. This was obviously a poor place for them, and it was not until we spent a day, the 28th, among the sloughs above Laguna Dam that we met with them in any numbers. Here a number of flocks were noted and an adult male secured by a Mr. Reckart. The latter person, who was thoroughly familiar with the ducks of the region, assured us that during some winters, the "Cans" were present by the thousands, while but very few were seen in other years.

Dendrocygna bicolor. Fulvous Tree-duck. One of these birds flew close over van Rossem on the 17th, allowing him to be positive of its identity.

Herodias egretta. Egret. A few may possibly breed near Yuma, but it is pretty certain that the majority of the birds to be seen here during the winter, have come to us from farther south. We were told on good authority that a flock of thirty or forty had been roosting for weeks on one of the islands above the dam. A number were seen by us on the 28th, and a male was secured on which the plumes of one side of the back

were almost completely developed, while those of the other side had but recently burst the envelopes.

Porzana carolina. Sora. Quite abundant in suitable spots. In the heavy growth bordering a slough near our camp, numbers were seen, and one taken on the 14th.

Chaemepelia passerina pallescens. Mexican Ground Dove. A sharp watch was kept for these birds during our stay, but it was not until we were on our way home, about two miles east of Fort Yuma, on the Imperial Valley road, that we encountered them. Twelve or fifteen were observed within a mile and a half, and two pairs secured. They were all feeding in the road, in little parties of two or three, and those shot contained many tiny black seeds, which had evidently fallen from a certain tall weed which thickly bordered the roadway.

Speotyto cunicularia hypogaea. Burrowing Owl. A pair was noted on the 13th, well back from the river bottom.

No *Micropallas whitneyi* (Elf Owl) was seen, although we examined fifty odd, likely-looking holes, all that were to be reached with the aid of a good ladder, on the 30th. Indubitable evidence of their recent presence was secured in the sahuaros, however, in the way of feathers, pellets and excrement. A number of the holes had been chopped out very recently, and whether the lack of owls was due to the industry of some collector that had preceded us, or to the possibility of the extremely cold weather having caused them to undertake a temporary visit to the southward, we are unable to say.

Centurus uropygialis. Gila Woodpecker. This species proved to be quite abundant among the cottonwoods and willows of the bottoms. They were feeding almost exclusively on the berries of the mistletoe. These, however, never seemed to be completely digested, and when a bird was shot, it would void a quantity of sticky, green pulp and seeds, which was very hard to remove from the feathers. Almost without exception, we found the birds to be infested with numbers of a long slender tape-worm, in some instances, in almost sufficient quantities to clog the intestines.

Colaptes chrysoides mearnsi. Mearns Gilded Flicker. These were present in small numbers, but *C. cafer collaris* exceeded them in numbers, in the ratio of about fifteen to one. The latter form must be merely a winter visitant to the region, while the former is resident; but two birds were secured which showed all the characters of hybrids between the two. On the 27th we came upon two *Colaptes* that were going through elaborate courting antics on a horizontal branch. Upon shooting these birds, we were much surprised to discover that the male was a Red-shafted and the female a Mearns Gilded.

So-called hybrids between *Sphyrapicus varius nuchalis* and *S. ruber ruber* have been taken in many parts of the west. An adult male which showed a blending of the characters of the two forms in about equal proportions, was secured on the 17th.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. We found, as Grinnell surmises, that this species is a winter visitant to the region, and apparently a regular one, for if such is not the case, this cold snap would assuredly have caused them to move farther south. They were not by any means abundant, but one was sure to be seen every two or three days, and several were collected. The cold nights, with temperatures well below freezing, must have greatly reduced their food supply.

Empidonax griseus. Gray Flycatcher. A female and two males of this form were taken, and two other birds seen, which would indicate that the species winters here.

On the cultivated fields of the lowlands we encountered mixed flocks of female *Otocoris alpestris pallida* and *O. a. leucolaema*. Among the scores seen, we searched carefully for males, but not one was noted. On the mesa lands well back from the river, however, we found only *pallida*, and although a score or so were seen and several taken, no females were observed.

Agelaius phoeniceus sonoriensis. Sonora Red-wing. Small flocks were frequently seen during our stay, and a number of specimens taken, all of which were crammed to the bill with kaffir corn seeds. Well over a hundred birds were observed close enough to distinguish between the sexes, and of these, but two were males. Near the Chiricahua Mountains, Arizona, Mr. van Rossem found a similar state of affairs last winter, as regards red-wings. Flocks of hundreds were seen almost daily for a while, but as far as he was aware, there was not a male in the vicinity.

Spizella breweri. Brewer Sparrow. This species winters abundantly in certain parts of the Imperial Valley, but they are evidently not so partial to the valley of the

Colorado as a winter home. We could always be sure of finding a few of them in certain favored spots, but they were very wary.

Junco hyemalis thurberi. Thurber Junco. Grinnell reported but one of these birds, which was obtained farther up the river, while we saw at least eight, and secured three. Their presence may have been partly due to the low temperature.

Melospiza lincolni lincolni. Lincoln Sparrow. Grinnell is of the opinion that a large proportion of those birds which his party saw (after February 26), had not spent the entire winter in the region. We, however, found the birds to be common in suitable places throughout our stay, and, since they are never much in evidence, they were probably even more common than was apparent. A specimen taken on the 14th was intermediate in characters between this form and *striata*.

Pipilo maculatus curtatus. Nevada Towhee. A single male of this form was secured on the 23rd, making this the southernmost station from which it has been reported.

Vermivora celata lutescens. Lutescent Warbler. An individual was shot on the 24th. This would seem to indicate that the subspecies occasionally spends the winter.

Oreoscoptes montanus. Sage Thrasher. A single bird was seen and taken on the 30th.

Toxostoma lecontei lecontei. Leconte Thrasher. The only bird of this species noted on the trip was one seen from the automobile as we were driving in the vicinity of the sahuaro grove above Potholes, January 30. Although reasonably close, the guns were not handy, and it escaped.

Sialia mexicana occidentalis. Western Bluebird. Bluebirds were encountered in small numbers. Of the two males secured, one is practically indistinguishable from specimens of *bairdi* from Arizona, while the other exhibits characters intermediate between that and typical *occidentalis*. As lots of birds from the Sierra Nevada of California also have the main characters as given for *bairdi*, we are at a loss just how to place our Fort Yuma specimens. Much work remains to be done with this group.

Covina, California, September 25, 1915.

FROM FIELD AND STUDY

Arizona Hooded Oriole in the Fresno District.—On May 26, 1915, a male Arizona Hooded Oriole (*Icterus cucullatus nelsoni*) was found among the raisin boxes in a shed on the Borell place, four miles west of Fresno. It was collected by Adrey Borell and the skin, in a somewhat mutilated condition, is now in my collection. During the following week three more males were seen at close range. All were in full plumage and alone.—WINIFRED N. WEAR, *Fresno, California*.

Nesting of Wild Ducks near San Francisco.—During the spring and early summer I visited Merced Lake a number of times for the purpose of taking a bird census of the region as requested by the Biological Survey. The following species of wild ducks were found to be nesting in the vicinity:

Mallard. On April 22, I flushed a Mallard from her nest. At that time the nest contained seven eggs, but on April 28 it contained ten. After sitting on the eggs about ten days the duck abandoned it though she stayed in the vicinity for a number of days.

Lesser Scaup Duck. A male of this species was seen on nearly every visit to the lake. In July this male, in company with a female and three young not yet old enough to fly, was seen out in the lake. The distance was too far for positive identification of the female, but it seems probable that a pair of this species nested in the vicinity.

Ruddy Duck. These were the most numerous ducks about the lake. They probably nested in considerable numbers, though no nests were found. Young of this species were seen in some numbers during July and August and must have been hatched in the vicinity of the lake, as they were not yet able to fly.

On June 5 of this year I visited Stow Lake and the other lakes of Golden Gate Park for the purpose of making an estimate of the number of wild ducks summering there. In all, 169 ducks were counted. They were of the following species: Mature Mallards, 66; young Mallards, 70; total Mallards, 136; Ruddy Ducks, 6; Baldpates, 2; Lesser

Scaups, 17. A week later six young Ruddy Ducks were seen, so at least two species are nesting in the park. The presence of the Scaups in considerable numbers and the late lingering of the Baldpates is of interest.—W. A. SQUIRES, *San Francisco, California*.

Western Bluebird Nesting in Los Angeles.—Dr. Miller's notes on the Western Bluebird (*Sialia mexicana occidentalis*) in a recent CONDOR recalls some old notes of my own. In 1892 a pair of this species persisted in trying to nest in a mail box on the corner of Solano Avenue and Buena Vista Street (now called North Broadway), Los Angeles. The birds considered the mail box a wholly suitable place, but the mail man and the owner objected. In spite of the resulting discouragements several eggs were laid before the Bluebirds gave up the site. I have forgotten the number laid, but I had one in my collection for several years and I am under the impression that they laid a complete set before abandoning the site.—W. LEE CHAMBERS, *Eagle Rock, California*.

The Hermit Warbler in Berkeley.—The Hermit Warbler (*Dendroica occidentalis*) has been reported from Berkeley, California, but once, and that was thirty years ago, in 1885 (Belding, Land Birds of the Pacific District, 1890, p. 215). It may therefore be of interest to know that on May 10, 1915, I found one feeding with a flock of Townsend Warblers (*Dendroica townsendi*) in the oaks near our house in Strawberry Canyon. On May 11 a large flock made up mainly of Townsend, Pileolated, and Yellow warblers sheltered several Hermit Warblers, and on May 12 the songs of the Townsend and Hermit warblers were heard more frequently even than that of the Pileolated Warbler, which was already nesting in Berkeley, though many others seemed to be in the migrating flock. The last Townsend Warbler was heard on May 17.

The month of May brought several other pleasant surprises, due, no doubt, to the continuous rains during the first part of the month. On May 11 the notes of a belated Robin reached me twice, and on Commencement Day (May 12) I was awakened in the early morning by the song of the Long-tailed Chat.—AMELIA S. ALLEN, *Berkeley, California*.

Scaup Ducks Breeding in Golden Gate Park, San Francisco.—In the summer of 1914 Dr. Otto Westerfeld, of San Francisco, told me that he had come across a young brood of Scaup Ducks (*Marila* sp.?) while strolling along the border of one of the lakes in Golden Gate Park, and was much surprised to find this duck breeding there.

Following up his report I made it a point to visit the park this season (1915) for the purpose of ascertaining if this species was breeding there again. While one or two adult Scaups were in sight at the time of my last visit, in July, there were no indications of their nesting, and upon questioning the man who has charge of feeding and looking after the ducks and geese in the park I was informed that no Scaups had bred there this year. But on that day I met an old friend—Mr. Stanley Forbes, a life member of the California Academy of Sciences,—who was practicing fly-casting at the club platform on Stow Lake, and mentioned to him my quest. He was interested in the duck question, and together we remarked upon the number of families of Mallards (*Anas platyrhynchos*) of all sizes, from a few days old to two-thirds grown, that were on the lake and even in sight as we were talking.

Some weeks later I met Mr. Forbes on the street and he informed me that only two or three days after our meeting in the park he was again practicing on the lake when two or three families of Scaup Ducks appeared, the ducklings being apparently but two or three days old. He stated that the youngsters did not seem to thrive, as many lagged listlessly behind their mothers, and subsequent observations led him to believe that few, if any, survived for any length of time. Being absent from San Francisco for some weeks after the first meeting with Mr. Forbes above mentioned, I had no opportunity to carry on personal observations; but I will say that this gentleman's word is to be relied upon as far as concerns the breeding of one of the two species of Scaups; yet, as he only knows them both as "Bluebills", he could not say which of the two it was. However, as the breeding in this latitude and locality of either species is a record, I beg herewith to submit the case as it stands.—JOSEPH MAILLIARD, *San Francisco, California*.

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EDITORIAL NOTES AND NEWS

According to AVIFAUNA No. 11, California has 541 species and subspecies of birds. It may be of interest to compare this figure with those for other states. Myron H. Swenk (in *Nebraska Blue Book*, 1915, page 835) has assembled the following data. There is as yet no report for Texas, but that state probably follows California as a close second. Nebraska comes third with 418 species (Swenk, 1915); then, west of the Mississippi, Colorado with 397 (Cooke, 1911), Kansas with 379 (Bunker, 1913), Missouri with 383 (Widmann, 1907), Iowa with 354 (R. M. Anderson, 1907), and Arkansas with 255 (A. H. Howell, 1911). East of the Mississippi the largest list seems to be that of New York with 411 (Eaton, 1910-14), while Maine has 327 (Knight, 1908), Connecticut 329 (Sage and Bishop, 1913), West Virginia 246 (Brooke, 1913), Michigan 326 (W. B. Barrows, 1912), Illinois and Wisconsin, combined, 398 (Cory, 1909), and Alabama 275 (Oberholser, 1909). Westwardly, Washington has 372 species (Dawson and

Bowles, 1909) and Arizona 362 (Swarth, 1914).

Mr. W. C. Bradbury, a retired capitalist of Denver, has been devoting most of his time the past three years to assembling a collection of birds' eggs for the Colorado Museum of Natural History, of which institution he is a trustee. His efforts have resulted in a representation of some 600 different species, with many fine series, occupying twenty-eight large show-cases. As can be readily inferred new things are now coming in very slowly.

William Alanson Bryan, Professor in the College of Hawaii, has just gotten out a book entitled "Natural History of Hawaii." Of the five "sections," one is devoted to the animal life of the archipelago, and of this section a consideration of its remarkable bird-life naturally occupies the larger part. Mr. Bryan is, of course, especially well equipped to handle this part of his subject with authority and in entertaining style.

We have to record the sad news of the death of Gaylord K. Snyder, active member of the Cooper Ornithological Club, who passed away at his home in Los Angeles, August 28, 1915. Mr. Snyder was a young man of most pleasing personality, a frequent attendant at Southern Division meetings, where his presence will be greatly missed, and an occasional contributor to THE CONDOR. In his untimely death the Club has sustained a distinct loss.

PUBLICATIONS REVIEWED

LITTLE BIRD BLUE | By WILLIAM L. and IRENE FINLEY | with illustrations by | R. Bruce Horsfall | and from photographs | [vignette] | Boston and New York | Houghton Mifflin Company | The Riverside Press Cambridge | 1915 | ; pp. 1-60. (\$0.75 net.)

The offering of the above title is a charming little volume which may be read aloud to the children as a bedtime story; and then around the circle it must go for each little auditor to look long and lovingly at little Bird Blue perched on Phoebe Katherine's head or William's careful fingers,—and suddenly we realize that it is long past the children's bedtime!

The story deals with three months in the life of a bluebird, from the time he was found orphaned and nearly dead in the nest box under the eaves until he answered the call of his race one autumn day.

The recital of Bird Blue's rearing interests the children greatly and brings to them many bits of wisdom regarding birds and bird conservation; while the photographs reproduced in the book are a perfect delight to child-lovers and bird-lovers alike. The drawings are for the most part good. However, we refuse to accept the "sharp-fanged creature" on page 12 as a prowling cat! It

seems to us that a cat which looked less like a ravenous lion and more like a demure pussy would better make us realize that it is not only the starving outcast which menaces our bird-life but also the purring feline by the hearthside.—H. W. GRINNELL.

OUR SHOREBIRDS AND THEIR FUTURE. By WELLS W. COOKE, Assistant Biologist, Bureau of Biological Survey. [From Yearbook of Department of Agriculture for 1914, pp. 275-294, pls. 21-23, figs. 16-18.]

In this paper Professor Cooke sets forth accurately and forcibly the main facts and factors in the shorebird situation. The diminution which began to be noticeable in the seventies continued at an accelerated rate, owing to excessive shooting, until several once plentiful species were threatened with extermination, and one of them had actually become extinct. It is emphasized that this was the result of the poorest sort of business policy; for the sport value of our shorebirds is great, and with an approach to former numbers should amount to vastly more. The recently enacted Federal regulations give promise of relieving the stress put upon the birds by spring-shooting. But only time will show whether or not these regulations are sufficient to cause a definite return towards former numbers. A slight improvement is thought by some to be already apparent.

Of course, with such species as depended at one season or another upon territory now under close cultivation, no great revival can be expected. Thus the Upland Plover, Mountain Plover, and Long-billed Curlew have had their breeding grounds largely appropriated for wheat raising or dairying. On the other hand, the Wilson Snipe and Woodcock must rest their cases chiefly in the hands of the gunner, or rather, in the laws which govern the gunner; for there is yet plenty of land suited to summering and to wintering of these birds.

There could be no better illustration of the practical application of purely scientific knowledge, than in the present instance, where the proper treatment of a valuable National asset must rest upon the accumulation of facts in distribution and migration of birds. The worthy efforts of Professor Cooke and his co-workers in the United States Biological Survey to ascertain the facts of bird migration, and to solve the complex problems presented, have occupied years. Marked success has been achieved, enough of success to now warrant generalizations of great economic importance as well as of deep scientific value. But prob-

lems remain, and vastly more facts must be garnered; nothing must be allowed to interrupt the course of these painstaking investigations.

The paper here noticed can be had for the asking; and because of the interest attaching to its subject and the fascinating style in which this subject is treated, there is every reason why each Cooper Club member should possess himself of a copy,—and not only that, but profit by knowing every bit of its contents.—J. GRINNELL.

A DISTRIBUTIONAL LIST OF THE BIRDS OF CALIFORNIA, by JOSEPH GRINNELL. (Pacific Coast Avifauna Number 11. Published by the Cooper Ornithological Club, October 21, 1915. Pp. 1-217, 3 plates.)

Every student of California birds, whether the amateur, painstakingly groping toward an acquaintance with the commoner species, or the advanced specialist in search of accurate information, will acclaim the appearance of this publication as something greatly needed, and, as need hardly be said, exceptionally well done. Dr. Grinnell, both from his official position and personal predilection, has been in a peculiarly advantageous situation for the production of this work, the activities of the museum of which he is the head being largely directed toward the accumulation of data relating to the distribution of California animals, while as editor of *THE CONDOR* he is naturally in a favorable position for hearing of the discoveries of others.

The real need of such a distributional list is shown in the exhaustion of the edition of the same author's "Check-List of California Birds" (Pacific Coast Avifauna No. 3), for which, though out of print several years, there are inquiries constantly received at the Cooper Club's business office. The present publication is an amplification of the earlier "Check-List", covering no wider a scope, but treating the subject with an elaboration of detail justified by the great accumulation of data since acquired. It treats purely of the distribution of species within the state of California, other phases, of life history or systematic status, being ignored save as incidental to the elucidation of ranges.

Statements of distribution, more especially of land birds, are made largely in terms of "life zones" and "faunal areas", and the whole book, in the resulting conciseness of phrase and clear conveyance of ideas, is a striking justification, or rather exemplification, of the practical usefulness—the

truth—of these conceptions. There are maps, of course, showing life zones and faunal areas, for use in connection with the text; and with this combination it would seem that even those most skeptical of the life zone concept, cannot but see the convenience and accuracy of this method of treatment. In fact, in such a state as California, with its wonderful diversity of surface and climate, it is difficult to see how any other phraseology could be at all satisfactory. Under conditions as uniform as those prevailing in many of the states east of the Rockies, where perhaps there may be but a single life zone represented, it is probably necessary to define ranges by political boundaries, but such a procedure in this state would be at best but clumsy and inaccurate.

In this connection we would draw especial attention to the introductory chapter on "Distributional Areas." Life zone ideas and phraseology have been used more and more by those qualified to handle such tools accurately, until they have come to permeate also the activities of many naturalists with but superficial or erroneous conceptions of the real meanings of the expressions they use so freely. The reviewer has listened to many more or less informal talks as well as set lectures, to mixed audiences or regular classes, in which the speakers were but too evidently possessed of the haziest ideas as to the distinctions they sought to use. Life zones, of course, have long been clearly explained, and the theories upon which they rest elucidated and enlarged upon, by Dr. C. Hart Merriam; but certain distributional terms, such as "faunal areas", "regions", etc., used so frequently of late, and in rather different senses from those in which they are found in older literature on the subject, have proved sources of confusion to many. Dr. Grinnell's explanatory chapter is so clear an exposition of this complicated subject, at least as regards conditions on the Pacific Coast, and of the sense in which he uses the several terms, that it should certainly be carefully perused by all interested in the study. To the reviewer's notion it might well be inserted entire in any educational text-book treating of the subject of geographical distribution. Of the three accompanying plates, two, showing, respectively, the Life Zones and Faunal Areas of California, are indispensable to an understanding of the accompanying text. The third is also most interesting and illuminating, showing extent of Life Zones on four cross-sectional profiles across the state.

The treatment of species is practically the same as in the author's previously published "Check-List of California Birds", though with far greater elaboration of detail. The accepted current name of each species is preceded by a running number, and, in parenthesis, the A. O. U. Check-List number. A list of synonyms includes probably all scientific names applied to the species in literature pertaining to California, and such English names as have been in general use. As these names are all included in the index, this is a feature of the publication that should be eminently useful to the local bird student. He can in a moment identify any bird name encountered in his reading. In the "status" there is abundant and most satisfactory citation of authorities, references mostly to literature, or to collections. The publication is, however, by no means merely a compilation of already published facts, but contains a vast amount of previously unpublished data. For much of this the field activities of the Museum of Vertebrate Zoology are responsible, though other large local collections have also contributed. Of special interest are the citations from Belding's unpublished manuscript of the "Water Birds of the Pacific District."

Five hundred and forty-one species and subspecies are included in the main list, of which one hundred and sixty-eight are water birds. The "Hypothetical List" numbers sixty-one. The order, and for the most part the general treatment, of the A. O. U. Check-List is followed, the most noticeable deviation from this standard lying in the rather liberal inclusion of slightly defined subspecies not admitted to the Check-List. Of the groups of birds largely represented within the state, attention may be drawn to the eleven races of Fox Sparrow (*Passerella iliaca*) here recognized, calculated to bring deeper despair to the heart of the amateur (and to some who are not amateurs) than the even longer list of California's song sparrows.

Two species are added to the state list, the Wilson Petrel (*Oceanites oceanicus*), and the Oregon Chickadee (*Penthestes atricapillus occidentalis*), on the basis of specimens in the collection of the Museum of Vertebrate Zoology. Another species, the Sonoma Thrasher (*Toxostoma redivivum sonomae*) is here first given a name (page 155). We do not understand the reason for including this diagnosis in a work of such a nature, and do not consider it a desirable procedure. There are many reasons why it would seem best to have given this

description previous publicity through some other channel, while there are no apparent advantages in the course adopted.

The reviewer is in a position where he is the constant recipient of requests from beginning bird students for the recommendation of some book or books treating of California birds, and it is a great satisfaction to be able conscientiously to urge the acquisition of a work such as the one here noticed. The judicious use of Grinnell's "Distributional List of California Birds", in conjunction with the same author's "Bibliography of California Ornithology" (Pacific Coast Avifauna No. 5) cannot fail to give a fund of accurate information along the line desired, as well as to point the way to sources of knowledge on related subjects not covered in these books. To the advanced specialist in ornithology, of course, this "List" will be an absolute necessity.

It goes without saying that the Cooper Club is congratulating itself upon the appearance of this, its latest and largest publication. Many and devious are the shifts to which the business office of the club has been put in the successful production of club members' contributions to knowledge, but the firm belief that the demand for worthy publications would eventually pay the cost of production is finding justification in the steadily increasing call upon the stock in hand. The demand for the "Distributional List of California Birds" should go far toward placing the Pacific Coast Avifauna branch of the Club's publishing business upon as firm a financial basis as is *THE CONDOR*.—H. S. SWARTH.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MAY.—A meeting of the Northern Division of the Cooper Ornithological Club was held at the Y. W. C. A. Auditorium, Panama-Pacific International Exposition grounds, San Francisco, California, May 19, 1915, at 4:30 P. M., at the close of the second afternoon session of the American Ornithologists' Union. President Joseph Mailliard was in the chair, with the following members present: Mesdames Allen and Bryant, Messrs. Bade, Bryant, Dwight, Evermann, W. K. Fisher, Grinnell, Horsfall, Law, Loomis, E. C. Mailliard, Nichols, Ohl, Palmer, Sage, Shelton, Storer, W. P. Taylor, Tyler, Wells, and Wilson.

The minutes of the April Northern Division were read and approved and the minutes of the Southern Division March meeting read. The following were elected to membership: F. W. Henshaw, and the four persons proposed at the Southern Division March meeting. The following applications for membership were read: C. M. Goethe, 2617 K Street, Sacramento, proposed by H. C. Bryant; Mrs. Carlotta C. Hall, 1615 La Loma Avenue, Berkeley, proposed by J. Grinnell; Miss Georgia V. Miller, 419 Golden Gate Avenue, San Francisco, proposed by H. L. Coggins; and Ashby D. Boyle, 351 5th Avenue, Salt Lake City, Utah, proposed by R. H. Palmer; and from the Southern Division four persons proposed at their April meeting.

The Secretary stated that a communication had been received from the Pacific Division of the American Association for the Advancement of Science, inviting Cooper Club members to become members of the American Association. Adjourned.—TRACY I. STORER, *Secretary*.

SEPTEMBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held in Room 102, California Hall, University of California, Berkeley, September 16, 1915, at 8 P. M. President Joseph Mailliard was in the chair with the following members present: Mesdames Bryant and Allen, and Messrs. Bryant, Carriger, Ohl, Storer, Trenor and Willett.

The minutes of the Northern Division May meeting were read and approved. Upon motion, duly carried, reading of the minutes of the Southern Division for the last four months was dispensed with. The following were elected to membership: C. M. Goethe, Mrs. Carlotta C. Hall, Miss Georgie V. Miller, and Ashby D. Boyle. Due to the time which has elapsed since the last meeting all persons proposed for membership at the Southern Division during the summer months were elected to membership. Applications for membership were received as follows: Miss Cornelia C. Pringle, Cupertino, proposed by Miss Hazel King; Miss Lydia Atterbury, 2620 LeConte Ave., Berkeley, and C. A. Purington, 2223½ Chapel St., Berkeley, both proposed by Tracy I. Storer.

A communication signed by J. Grinnell, W. Lee Chambers, Frank S. Daggett, and Harry S. Swarth, proposing for honorary membership in the Club, Mr. Henry W. Henshaw, Chief of the Bureau of Biological Survey, was read. It was decided to notify

Northern Division members of this application when the October meeting notices are sent out.

A communication from Mr. A. L. Barrows, secretary of the Pacific Division of the A. A. S., was read, asking that the Northern Division appoint a representative for the Affiliation Committee of the Association.

The Club then adjourned to attend a lecture by Dr. W. T. Hornaday, Director of the New York Zoological Park, on the subject, "Shall We Increase our Big Game on a Food Supply Basis?" Adjourned.—TRACY I. STORER, *Secretary*.

SOUTHERN DIVISION

AUGUST.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Los Angeles, Thursday evening, August 26, 1915. President Law was in the chair, and the following members present: Miss Germain, Mrs. Husher, and Messrs. Brown, Chambers, Daggett, Enoch, Holland, Ingersoll, Nokes, Rich, Shepardson, Swarth, Wood, and Wyman. Visitors present were Mrs. Nokes, Mr. Daniel, and Mr. Arra Darhanian.

The minutes of the July meeting were read and approved. New members elected were: S. D. Moles, Claremont, and Wade L. Enoch, Tropic. New names presented were: F. E. Garlough, Gladstone, Oregon, proposed by S. G. Jewett; Nat T. Sabin and Eugene P. Sabin, both of Hollywood, California, proposed by J. Eugene Law.

Mr. Law exhibited a series of woodpeckers, including most of the North American species. Adjourned.—H. S. SWARTH, *Secretary*.

SEPTEMBER.—The regular meeting of the Southern Division was held at the residence of Dr. L. H. Miller, on Sunday afternoon, September 26. President Law was in the chair, and the following were in attendance: Mrs. Husher, Mrs. Myers, Mrs. Pleasants, the Misses Atsatt, Dodge, Drachman, Hollister, Moore, and Palmer, Mr. and Mrs. Chambers, Mr. and Mrs. Daggett, Mr. and Mrs. Howell, Dr. and Mrs. Miller, Dr. and Mrs. Stivers, Mr. and Mrs. Sabin, Mr. and Mrs. Law, and Messrs. Davis, Holland, Jewett, Pierce, and White.

The minutes of the August meeting were read and approved. New members elected were: Nat T. Sabin, Eugene P. Sabin, and F. E. Garlough. Mrs. Myers spoke on "the Hornaday plan" for ensuring a permanent supply of big game. Mr. Law read a letter

from Allan Brooks, now with the British Army in France. Mr. Pierce spoke on bird conditions at Bear Lake and other points in the San Bernardino Mountains, which led to a general discussion of experiences of various members during the summer just past. Adjourned.—W. LEE CHAMBERS, *Secretary, pro tem*.

INTER-MOUNTAIN CHAPTER

SEPTEMBER.—A meeting of the Inter-Mountain Chapter of the Cooper Ornithological Club was held at Salt Lake City, Utah, September 14, 1915, in the office of Dr. D. Moore Lindsay, Boston Building. The meeting was called to order at 8:30 P. M., Dr. D. Moore Lindsay presiding. Members in attendance were: J. Sugden, Jr., C. Barnes, J. H. Paul, D. Moore Lindsay, A. O. Treganza, Mrs. A. O. Treganza. The minutes of the May meeting were read and approved.

A study of the local breeding Gulls, Terns, Cormorants and Pelican was begun. J. Sugden exhibited a very interesting skull of *Larus californicus*, D. Moore Lindsay some skins of the Caspian Tern and Bonaparte Gull, and Mrs. A. O. Treganza read the Treganza notes and observations on these species.

Mr. A. O. Treganza reported on the slaughter of the Sage Hen in northeastern Utah, from which locality he had recently returned. A. O. Treganza and J. H. Paul were appointed as a committee to present the matter to the State Game Warden for immediate action. Meeting adjourned at 10:30 P. M.—MRS. A. O. TREGANZA, *Secretary*.

OCTOBER.—A meeting of the Inter-Mountain Chapter of the Cooper Ornithological Club was held at Salt Lake City, Utah, October 12, 1915, in the office of Dr. D. Moore Lindsay, Boston Building. President Lindsay was in the chair, and the meeting was called to order at 8:30 P. M. Members present were: C. Barnes, J. A. Mullen, D. Moore Lindsay, A. O. Treganza, Mrs. A. O. Treganza. Mr. D. W. Parratt was a visitor. The minutes of the September meeting were read and approved.

The evening was given over to a round table talk and open discussion of local breeding ducks. Many early and late records were given. President Lindsay exhibited some very interesting sets of ducks' eggs showing the parasitic tendencies of certain species of this family. Meeting adjourned at 10:30 P. M.—MRS. A. O. TREGANZA, *Secretary*.

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PHILADELPHIA TO THE COAST IN EARLY DAYS, AND THE
DEVELOPMENT OF WESTERN ORNITHOLOGY PRIOR TO 1850*

By WITMER STONE

IT IS MY PRIVILEGE at this meeting to represent the Academy of Natural Sciences of Philadelphia. On the long journey from coast to coast that the eastern members have just completed, the names both of localities that we passed and of birds that we saw, have constantly called to mind the fact that other and more worthy Philadelphia ornithologists had made this trip before. They came not to participate in scientific meetings nor to enjoy the generous hospitality of friends and fellow students, but as pioneers in investigating the natural resources of one of the richest sections of our continent, to search out in the wilderness the new species of birds, mammals, plants, etc., to bring home specimens upon which scientific descriptions and names might be established.

They came, not surrounded by all the comforts of modern travel, but on foot or on horseback, picking their way through unexplored wilds, exposed to indian attack and at the mercy of the elements, dependent largely upon the country through which they passed for sustenance. Some of them gave up their lives in the pursuit of our favorite science, and to one and all we owe a debt of gratitude for the part they played in developing our knowledge of the ornithology of the Pacific Coast. Though we are inclined to think of these early explorers as men of mature years, they were mostly young fellows from 19 to 21 or 30 years of age, ready for any hardships or danger in the pursuit of their object.

Does it not seem that this is the proper time and place for us to pause in the activities of today to review the achievements of these early pioneers and in so doing pay a well merited tribute to their memory? I think you will agree with me that it is, and will bear with me while I briefly review their labors in the west.

*Read at the Thirty-third Stated Meeting of the American Ornithologists' Union, San Francisco, May 18, 1915.

Most of the men who laid the foundations of western ornithology were Philadelphians, but they did not all come from the Quaker City, and it seems only fair to stretch my theme sufficiently to include these latter, as well as some mention of other sources through which a knowledge of Pacific Coast birds was obtained in the years before the great transcontinental expeditions.

Prior to 1800 but little was known of the bird life of the west coast. Early voyagers touched at several points, but as a rule had no interest in wild life except as it afforded them food or profit. Captain Cook on one of his famous voyages touched, among other places, at Nootka Sound, Vancouver Island, and Prince William Sound, now in the territory of Alaska, in April and May, 1778; and Sir Joseph Banks who accompanied him obtained the first specimens of west coast birds of which we have record.

At the former locality Cook mentions among the dried skins and fragments of birds brought them by the natives "a small species of hawk; a heron; and the *alcyon* or large-crested American king-fisher". "There are also," he writes, "some, which, I believe, are not mentioned, or at least vary, very considerably, from the accounts given of them by any writers who have treated professedly on this part of natural history. The first two of these are *species* of woodpeckers. One less than a thrush, of a black colour above, with some white spots on the wings, a crimson head, neck and breast, and a yellowish olive-coloured belly; from which last circumstance it might perhaps not improperly be called the yellow-bellied woodpecker. The other is a larger, and much more elegant bird, of a dusky brown colour, on the upper part, richly waved with black, except about the head; the belly of a reddish cast, with round black spots; a black spot on the breast; and the under-side of the wings and tail of a plain scarlet colour, though blackish above; with a crimson streak running from the angle of the mouth, a little down the neck on each side.*" These are easily identified as the Red-breasted Sapsucker and the Red-shafted Flicker, while a small bird of the finch kind is obviously a Junco. Cook also mentions Hummingbirds, which he regards as migrants from farther south since they saw none at first, but later the "natives brought them to the ships in great numbers". These were the Rufous Hummer.

At Prince William's Sound were seen the White-headed Eagle, the Alcyon or great Kingfisher, the Hummingbird, and a small land bird evidently the Golden-crowned Sparrow. Steller's Jay was also obtained at Nootka Sound, a bird which had been previously observed by this explorer at the same place. A number of these species were described by Latham and Pennant and in due course named by Gmelin.

In 1786 a party of French explorers under Comte de La Pérouse touched at San Francisco and Monterey and obtained two birds which were figured under the names "*Perdrix de la Californie*" and "*Promerops de la Californie Septentrionale*"—respectively the California Quail and the California Thrasher. It was this early discovery that led Gambel when he found and described the Thrasher some sixty years later to bestow upon it the name *redivivus*: resurrected.

A British expedition commanded by Capt. Vancouver visited the same ports in November, 1792, and Archibald Menzies, the botanist, procured specimens of the California Vulture and the Quail which were duly described, figured and named by Shaw in 1798.

*A Voyage to the Pacific Ocean, etc., Dublin, 1784, vol. 2, pp. 296-297.

This completes the summary of actual ornithological discovery on the coast prior to 1800. We must, however, remember that various species of west coast birds, or geographic races which were at that time and for half a century later regarded as identical with them, were already known from the eastern United States, Hudson's Bay, or Mexico. When the western races of these birds were first found on the coast the discovery caused little or no comment as the early explorers thought they were the same as those of the east and often failed to preserve specimens. It is therefore difficult to say just when they were actually discovered.

Up to the time of the publication of Wilson's Ornithology, 1808-12, no less than 80 species of Californian land birds were thus known from identical or closely related races in the east although only one or two had been actually identified from the coast. While Wilson's great work was in progress the first of the transcontinental expeditions was organized mainly through the efforts of Thomas Jefferson, then president of the United States. Philadelphia has no direct claim upon this expedition which was under the leadership of two Virginians, Meriweather Lewis, Jefferson's private secretary, and Capt. William Clarke. From the fact, however, that the few birds which they brought back were deposited in Peale's "Philadelphia Museum", while the manuscripts of the expedition are still among the treasures of the American Philosophical Society in Philadelphia, the enterprise seems in a measure identified with our city.

Had a naturalist been included in the Lewis and Clarke party there is no telling what discoveries would have ensued, but as it was, specimens of only three new species were brought back, which were named, figured and described by Wilson as Clarke's Crow, Lewis' Woodpecker, and the Louisiana Tanager. Twenty-six other land birds as well as a number of water birds are mentioned in the painstaking diaries that were kept by the explorers, but these were mostly either well known eastern species or so vaguely described as not to be clearly recognizable. The Sharp-tailed and Franklin's Grouse, the Sage Hen, and the Magpie are easily identified, as also the Whistling Swan which was named by Ord from Lewis and Clarke's description.

This expedition rendezvoused at the mouth of Wood River in Illinois opposite the Missouri and consisted, besides the commanders who were then 30 and 34 years of age respectively, of nine young men from Kentucky, fourteen volunteers from the U. S. Army, two French watermen, an interpreter and hunter, and Capt. Clarke's negro servant, twenty-nine in all, with a detail of seven soldiers and nine watermen to escort them up the Missouri as far as the Mandan Nation (now Bismark, North Dakota). They set out on May 14, 1804, reached Fort Clatsop (Vancouver, Washington) December, 1805, and returning March 23, 1806, reached the Mississippi September 23.

The discovery of Clarke's Crow or Nutcracker, is thus described in Clarke's original journal under date of August 22, 1805, from western Montana. "I saw today [a] Bird of the woodpecker kind which fed on Pine burs its Bill and tail white the wings black every other part of a light brown, and about the Size of a robin"*. The identification of this bird as a woodpecker gives us some idea of the extent of his ornithological knowledge. The Lewis's Woodpecker was encountered on July 20 and in Lewis's diary is the following: "We encamped on the Lar^d side [of the river] near a spring on a high

*Thwait's Original Journal of the Lewis and Clarke Expedition, vol. III, p. 17, 1905.

bank [El Dorado, 12 miles northeast of Helena] the prickly pears are so abundant that we could scarcely find room to lye. I saw a black woodpecker (or crow) today about the size of the lark woodpecker [Flicker] as black as a crow. I endeavored to get a shoot at it but could not it was a distinct species of woodpecker; it has a long tail and flies a good deal like the jay bird.”* No specimen of either was secured until about May 27, 1806, on the homeward journey, and in the diary of this and the following day detailed descriptions are given. The specimens were taken on the Upper Kooskooski near the base of the Bitter-root Mountains, in Idaho, and were now clearly recognized as a crow and a woodpecker, respectively.

The Sage Grouse is mentioned in many places, and a sketch of it was made. The first reference is as follows: August 12, 1805, near Dillon, Montana. “we also saw several of the heath cock with a long pointed tail and an uniform dark brown colour but could not kill one of them. they are much larger than the common dunghill fowls and in their [h]abits and manner of flying resemble the growse or prairie hen.”† On August 20, Capt. Clarke says, “I killed a Pheasant at the Indian Camp larger than a dungal [dunghill] fowl with f[1]eshy protuberances about the head like a turkey.”† This completes the contributions of Lewis and Clarke to American ornithology.

Pike’s expedition to the Rocky Mountains in 1806 was no better equipped with naturalists than was that of Lewis and Clarke, and added nothing to our knowledge of western ornithology. It is mentioned in this connection only because of its possibilities in this line, for Alex. Wilson, endorsed by William Bartram, the veteran Philadelphia naturalist, made an earnest plea to President Jefferson to be allowed to accompany the party. He received no reply whatever to his letter, and, in as much as he had already had a cordial exchange of letters with Jefferson on ornithological matters, it seems probable that his application never reached the President’s eye.

The organization of Major Long’s party for another expedition to the Rockies in 1819 showed an appreciation of the scientific possibilities of such expeditions and two able Philadelphia naturalists were selected to accompany it. Thomas Say, one of the founders of the Philadelphia Academy who was then 32 years of age, and Titian Peale, youngest son of the founder of the famous Philadelphia Museum, who had just turned 19.

This expedition did not propose to pass beyond the Rocky Mountains, and strictly speaking has no bearing upon the ornithology of the coast; but since it brought to light no less than twelve characteristic coast birds, even though they were secured on the eastern edge of their range, it seems to have a place in this connection. The new birds were the Dusky Grouse, Band-tailed Pigeon, Arkansas Flycatcher, Arkansas Goldfinch, Lark Sparrow, Lazuli Bunting, Cliff Swallow, Orange-crowned Warbler, Rock Wren, Say’s Flycatcher, Yellow-headed Blackbird, House Finch, and Burrowing Owl.

Long’s expedition followed the regular highway to the frontier, the Ohio River, down which Lewis and Clarke had gone in 1803 to join their men; down which in 1808 went Audubon and his bride to establish himself in business in Kentucky; and down which in 1810 Alexander Wilson had guided his little row boat “The Ornithologist” on his trip to New Orleans. They left Pittsburgh on May 5, 1819, reaching St. Louis June 9, and Council Bluffs (near the

*Thwait’s Original Journal of the Lewis and Clarke Expedition, vol. II, p. 252, 1904.
†do. vol. II, pp. 335 and 336.

present city of Omaha) in the early autumn and here passed the winter. The summer of 1820 was spent in exploring the eastern base of the central Rockies, returning to the mouth of the Ohio by November.

The Rocky Mountain party consisted of twenty persons with twenty riding animals and eight pack horses, each man carrying his personal belongings. Peale was appointed by Major Long as assistant naturalist, his services to be collecting and preserving of specimens, draughting and delineating them, preserving skins, etc. Sixty skins were preserved, several thousand insects, 500 species of plants, and many shells and rocks, while 122 sketches were made, all of which were deposited in Peale's Museum at Philadelphia. Say described some of the birds in the report of the expedition and others were described by Bonaparte in his continuation of Wilson's Ornithology, Peale preparing the illustrations. Say was mainly interested in entomology and conchology and while he, as chief naturalist, published the new birds, it was probably mainly due to young Peale that such important ornithological results were obtained.

Peale lived to a ripe old age and did not pass away until 1885, just before I became connected with the Philadelphia Academy. I occupied what had formerly been his room and in it were stored his collection of butterflies and many relics of the U. S. Exploring Expedition (1838-42) which he had accompanied on its voyage around the world. During this voyage, by the way, he made some collections in California. Being on board the *Peacock* which was wrecked at the mouth of the Columbia, May 18, 1840, he was forced to journey overland to San Francisco to join another vessel, the *Vincennes*.

During the interim of fifteen years following the return of Long's expedition in 1820 some thirty west coast birds were made known to science, but only a very few were obtained from within the confines of the present United States.

Swainson in 1827 described a number of species obtained in northern Mexico by Mr. Bullock, a collector and proprietor of a museum in England. Among these were the California Woodpecker, Black Phoebe, Bullock's Oriole, Black-headed Grosbeak, Violet-green Swallow, and Dipper.

Wagler described from the same country the Ladder-backed Woodpecker, and Brewer's Blackbird.

From California, Lesson, the Frenchman, described the Road-runner from a specimen obtained by Dr. Botta, a surgeon on a French sailing vessel, and deposited in the duke of Rivoli's collection at Paris, which later came to Philadelphia. This bird is probably referred to by Hernandez long before, but the description is too vague for positive identification.

The next transcontinental expedition which figures in ornithological annals was organized in 1834 by Capt. Wyeth who was interested in the Columbia River Fishing and Trading Company. John K. Townsend and Thomas Nuttall, the former of Philadelphia, the latter professor of natural history at Harvard University, joined the party for the purpose of making ornithological and botanical researches in the far west. Townsend was but twenty-five years old but was already a competent authority on the birds of the east, while Nuttall was forty-eight and had just published the first volume of his classic "Manual", though he was at this time, and probably always, more of a botanist than an ornithologist.

The two naturalists took the usual route down the Ohio to St. Louis and thence across the state on foot to Independence where the caravan was encamped. They had in all 70 men and 250 horses, and the order of march

was thus described by Townsend: "Captain Wyeth and Milton Sublette took the lead, Mr. N[uttall] and myself rode beside them; then the men in double file, each leading, with a line, two horses heavily laden, and Captain Thing (Captain W's assistant), brought up the rear. The band of missionaries, with their horned cattle, rode along the flanks."* Later on at Ft. Hall some of the caravan went on ahead leaving 30 men and 116 horses in Wyeth's party during the latter days of the march. They left Independence on April 28, reaching Fort Vancouver on the Columbia on September 16, after the usual vicissitudes of transcontinental travel. The narrative of their journey written and published by Townsend is most interesting reading, full of incidents of buffalo hunting and of the habits and peculiarities of the various tribes of Indians with which they came in contact.

Townsend got many birds *en route*, a number of which were new, and many others at Fort Vancouver and elsewhere about the mouth of the Columbia. Unfortunately he gives but little information about birds in his narrative, apparently deeming ornithology of but little general interest, and only once does he refer to his collection. This is in a description of a violent storm which overtook them on the Columbia below Fort Walla Walla during which Mr. Nuttall's dried plants were somewhat damaged, "but", he says, "my bale of birds escaped without any material injury".

The Band-tailed Pigeon appealed to the sportsman in him, and he writes of it on May 21, 1835, as "very abundant near the river, found in flocks of fifty to sixty and perching upon the dead trees along the margin of the stream. They are feeding upon the buds of the balsam poplar; are very fat and excellent eating. In the course of the morning, and without leaving the canoe, I killed enough to supply our people with provisions for two days"†. The Pintail duck also occurred in abundance, and Townsend and an Indian killed 26 by simultaneous discharge of their guns.

There has been some comment among our friends the herpetologists as to why Townsend failed to procure any reptiles. A close perusal of his narrative clears up any doubt on this point. In speaking of the behavior of one of their men after reaching the Columbia he says: "His appetite for ardent spirits was of the most inordinate kind. During the journey across the country I constantly carried a large two-gallon bottle of whiskey, in which I deposited various kinds of lizards and serpents, and when we arrived at the Columbia the vessel was almost full of these crawling creatures. I left the bottle on board the brig when I paid my first visit to the Willammet falls, and on my return found that he had decanted the liquor from the precious reptiles which I had destined for immortality, and he and one of his pot companions had been 'happy' upon it for a whole day. . . . I did not discover the theft until too late to save my specimens, which were in consequence all destroyed."‡

Townsend and Nuttall visited the Sandwich Islands during the winter of 1834-5. Nuttall then visited California, stopping at Monterey, Santa Barbara and San Diego, and returning round the Horn reached home in 1836. Townsend remained until 1837, and then returned by the same route, reaching home November 17.

Nuttall obtained specimens of the Yellow-billed Magpie and the Tricolored Redwing which he gave to Audubon who published them in his great

*Townsend's Narrative, Phila. 1839, p. 27.

†do. p. 220.

‡do. p. 224.

work. The greater part of Townsend's birds were apparently brought back by Nuttall and the history of their publication is amusing. Audubon after the publication of the third volume of the Ornithological Biography returned to America from Scotland in August, 1836. "In Boston", he says, "I heard of the arrival of Thos. Nuttall Esq., the well-known zoologist, botanist and mineralogist who had performed a journey over the Rocky Mountains to the Pacific Ocean accompanied by our mutual friend John Kirk Townsend. Mr. Nuttall generously gave me of his ornithological treasures all that was new and inscribed in my journal the observations which he had made respecting the habits and distribution of all the new and rare species which were unknown to me. . . .

"Dr. Townsend's collection was at Philadelphia; my anxiety to examine his specimens was extreme; and I therefore, bidding farewell to my Boston friends, hurried off to New York" and Philadelphia. "Soon after my arrival, I called on my learned friend Dr. Charles Pickering" . . . ; "Having obtained access to the collection sent by Dr. Townsend, I turned over and over the new and rare species; but he was absent at Fort Vancouver, on the shores of the Columbia River; Thos. Nuttall had not yet come from Boston, and loud murmurs were uttered by the *soidisant* friends of science, who objected to my seeing, much less portraying and describing those valuable relics of birds, many of which had not yet been introduced into our Fauna.

"The traveller's appetite is much increased by the knowledge of the distance which he has to tramp before he can obtain a meal; and with me the desire of obtaining the specimens in question increased in proportion to the difficulties that presented themselves. . . . I at length succeeded. It was agreed that I might *purchase duplicates, provided* the specific names agreed upon by Mr. Nuttall [who had now arrived] and myself were published in Dr Townsend's name.

"This latter part of the affair was perfectly congenial to my feelings, as I have seldom cared much about priority in the naming of species. I therefore paid for the skins which I received and have now published such as proved to be new, according to my promise."*

The birds described in the paper published in the Philadelphia Academy *Journal* in 1837 prior to Townsend's return were: Chestnut-backed Titmouse, Bush-tit, Mountain Mocking Bird, Hermit Warbler, Black-throated Gray Warbler, Townsend's Warbler, Audubon's Warbler, Western Bluebird, Chestnut-collared Longspur, Oregon Junco, Lark Finch, and Rocky Mountain Plover. Townsend added in the Appendix to his "Narrative": Vaux's Swift, and MacGillivray's Warbler.

Later, on Townsend's arrival, Audubon purchased all his additional novelties and secured memoranda relating to the habits of the western birds from both him and Nuttall. These are all published in vols. IV and V of the Ornithological Biography, while practically the same matter is reprinted by Nuttall in the second edition of his "Manual" in which the western species are added.

It is regrettable that Townsend and Nuttall never published the complete ornithology of their expedition over their own names and in their own way. The fragments that we pick out of Audubon and Nuttall only whet our appetites for more. Their notes had the stamp of scientific accuracy, but while both were fluent writers they apparently did not believe in flowery elaboration

*Ornithological Biography, Introduction to vol. IV, p. ix.

in scientific matters. Audubon seemed to miss this element in the short pithy notes with which they supplied him, and to make up for it launched forth in a picturesque, if wholly imaginary, account of their trip in the opening of his fourth volume (1838) which is in strong contrast to Townsend's own narrative which appeared in 1839, but it has no doubt fired many a youthful mind with a determination to visit the wonderful country which was pictured in such brilliant colors. He says:

"How delightful, I have often exclaimed, must have been the feelings of those enthusiastic naturalists, my friends Nuttall and Townsend, while traversing the ridges of the Rocky Mountains! How grand and impressive the scenery presented to their admiring gaze, when from an elevated station they saw the mountain torrent hurling its foaming waters over the black crags of the rugged ravine, while on wide-spread wings the Great Vulture sailed overhead watching the departure of the travellers, that he might feast on the salmon, which on striving to ascend the catarract had been thrown on the stony beach! Now the weary travellers are resting on the bank of a brawling brook, along which they are delighted to see the lively Dipper frisking wren-like from stone to stone. On the stunted bushes above them some curious Jays are chattering, and as my friends are looking upon the gay and restless birds, they are involuntarily led to extend their gaze to the green slope beneath the more distant crags, where they spy a mountain sheep, watching the movements of the travellers, as well as those of yon wolves stealing silently toward the fleet-footed animal. Again the pilgrims are in motion; they wind their pathless way round rocks and fissures; they have reached the greatest height of the sterile platform; and as they gaze on the valleys whose waters hasten to join the Pacific Ocean, and bid adieu, perhaps for the last time, to the dear friends they have left in the distant east, how intense must be their feelings, as thoughts of the past and future blend themselves in their anxious minds! But now I see them brother-like, with lighter steps, descending towards the head waters of the famed Oregon. They have reached the great stream, and seating themselves in a canoe, shoot adown the current, gazing on the beautiful shrubs and flowers that ornament the banks, and the majestic trees that cover the sides of the valley, all new to them, and presenting a wide field of discovery. The melodies of unknown songsters enliven their spirits, and glimpses of gaudily plumed birds excite their desire to search those beautiful thickets; but time is urgent, and onward they must speed. A deer crosses the stream, they pursue and capture it; and it being now evening, they land and soon form a camp, carefully concealed from the prying eyes of the lurking savage. The night is past, the dawn smiles upon the refreshed travellers, who launch their frail bark; and as they slowly float on the stream, both listen attentively to the notes of the Red-and-White-winged Troupial, and wonder how similar they are to those of the Red-winged Starling". From these rhetorical heights we come to earth with an unpleasant jar as our eye catches a pencilled note in Townsend's hand on the margin of our Academy copy of Audubon. It says the name *tricolor* which Audubon gave to this blackbird should be credited to Nuttall, who communicated both specimen and name to Audubon, who appropriated the latter! Thus early did scientific jealousies develop and the never ceasing contest for priority and credit!!

John K. Townsend was evidently a genius whom force of circumstances prevented from reaching his proper place in ornithological annals. Had he had the financial backing that Edward Harris was ever ready to provide for

Audubon, or had there been salaried scientific positions in those early days by which an ornithologist could make a living, the name of Townsend would have been among the leaders in American ornithology. I have talked with his cousin who remembers him dressed in the furs and skins that he brought from the far west, and with his brother-in-law who knew him in the intimacy of family relationship; and I have read the opinions of Cassin in his confidential letters to Baird and all testify to his high character and ability.

Townsend filled minor positions at Washington looking after the birds of the U. S. Exploring Expedition, and later practiced dentistry in Philadelphia. He seems always to have been handicapped by financial conditions and died suddenly on February 6, 1851, at the age of 42. It is deplorable that a man of his capabilities could not have been given the opportunities of developing them.

Prior to the appearance of Townsend's Narrative, two foreign expeditions had collected in California. A German explorer then in Mexico, Ferdinand Deppe, travelled northward to Monterey and went from there to the Hawaiian Islands, where, by the way, he met Townsend. He made some collections and his ornithological discoveries were published by Lichtenstein in 1838. They did not amount to much, however, as he secured only one new species, the Ferruginous Rough-leg.

A British expedition under Capt. Beechey (1825) obtained a much larger collection which was reported on by Vigers in 1839. The material was actually collected by Dr. Collie, Mr. Lay and Lt. Belcher. One hundred species were listed (many from Mexico), but the California Jay, Pygmy Nuthatch, California Towhee and Red-shafted Flicker, were described as new from California.

This brings us to the next transcontinental expedition, that of William Gambel. Gambel was a young protege of Thomas Nuttall. All I have been able to learn of his ancestry was that he lived in Philadelphia with his mother and sister who were in humble circumstances. He later had some sort of occupation at the Academy of Natural Sciences, and in 1842 (Cassin says 1841) at the solicitation of Nuttall, he made a journey to California with a party of trappers. He took a more southerly route than any of the previous parties, following the Santa Fe trail, exploring the Raton Mountains of northern New Mexico and passing thence from Santa Fe to the Colorado River and into southern California. He returned round the Horn reaching Philadelphia with his treasures in August, 1845.

The new species which Gambel discovered included the Wren-tit, in many ways one of the most remarkable birds of the coast, Plain Titmouse, Mountain Chickadee, California Thrasher, Gambel's Quail, Elegant Tern, and Nuttall's Woodpecker. Diagnoses of some of his new species were sent from the west to Nuttall and published before Gambel's return. His final report, a fully annotated list of 176 species, is the first paper of note on Californian ornithology and forms the basis of all subsequent work. Gambel and his specimens reached Philadelphia about August 15, 1845, and Cassin, writing to Baird on this date, says: "Gambel is here with his California birds and others—not very many but some of the most magnificent specimens I ever saw. He has four new species in addition to those already described: a queer little *Parus crested* but totally distinct from *bicolor*; another which he calls *Parus* but is hardly of that genus more like *Setophaga*; an extraordinarily large long billed bird which he

calls *Promerops*; a new *Mergulus* like *alle* but entirely distinct, with others that need examining. He has the most beautiful specimens of well-known birds and others not so well known, as *Sitta pygmaea*, *Tyrannula saya*, *Tyrannula nigricans*, *Sialia occidentalis*, etc. Decidedly the gem of his collection is a most superb specimen of *Leptostoma longicauda* a beautiful Cuckoo-like bird which walks on the ground, but I have not time really to tell you about it. His *Lophortyx gambelii* is splendid and I can find no description of it in books to which I have access."

The crested titmouse was the Plain Titmouse, the other one "like *Setophaga*" was the Wren-tit, and the *Mergulus* was Cassin's Auklet.

On April 5, 1849, Gambel left on another expedition to California, joining a company with Isaac J. Wistar, then a young man of twenty-one, later general in the Civil War and president both of the Philadelphia Academy and of the American Philosophical Society. General Wistar has told me the few details of the trip up to a point where the party divided, Gambel going with those who followed Hudspeth's trail which crossed the Sierra near the head of the Sacramento Valley. They suffered great hardships being caught by the snows in the mountains, and Gambel and a few others were the only ones to reach California. He almost immediately contracted typhoid and died on December 13, 1849. He was buried on a sunny hillside on the Feather River. His death terminated a career that would probably have yielded results of the utmost value to ornithology; for in the short space of eight years Gambel demonstrated that he was possessed of remarkable ability both as an explorer and field naturalist and as a student of natural history.

Immediately after the acquisition of California by the United States at the close of the Mexican War, John G. Bell, the famous taxidermist of New York, who had accompanied Audubon up the Missouri in 1843, made a trip to the coast, crossing through Central America as did so many of those who rushed westward in search of gold. Bell returned April 17, 1850, having gotten a number of interesting novelties which were described by Cassin and purchased for the Philadelphia Academy; among these were Bell's Sparrow, Lawrence's Goldfinch, Williamson's Sapsucker, and White-headed Woodpecker. Of the last, Bell says: "I shot this bird in Oregon Cañon near Georgetown about 12 miles from Sutter's Mill. It seemed to prefer the tall pine trees and generally kept very high".

Baird was about to describe the same bird some years later from a specimen which had been obtained by some other collector for the Smithsonian Institution, and we find in Cassin's letters the following amusing sentence: "I guess you had better not describe that new woodpecker—black with a white head—it is not so very new—compare it with *Melanerpes albolarvatus* Cassin Jour. A. N. S. last number published—perhaps you had better not describe any of them. Send them this way!" He was constantly arguing or joking with Baird about the new birds that were discovered and was jealous of any one else publishing the novelties. Baird seems to have good-naturedly sent him most of the Pacific Railroad material, and of course with the birds and books to which Cassin then had access at Philadelphia he could determine what was new better than any one else.

One lot sent for his opinion some years later contained a fine new species of Purple Finch, which he considered the best thing in the collection, adding as a suggestion to Baird, name it *Cassini*, which, by the way, he did. Regarding Hutton's Vireo, Cassin writes: "Calling that Vireo after your

friend Hutton is one of the severest things. I don't want to do it—when he gets better known I will call something after him. This kind of thing is bad enough at the best, but to name a bird after a person utterly unknown is worse than that. I do not doubt his entire capability but I don't like to thrust honors upon him." Baird, however, stood firm and a little later Cassin writes: "Please give me the name in full of Mr. Hutton, his name, style, address, business, locality, age whether young or adult, present pursuits, occupations and whereabouts to the best of your knowledge and belief and I must have it early as the paper goes to the printer about Wednesday or Thursday next."

It seems also that Henry's Nighthawk came near having another name, but in this case Baird gave in to Cassin's wishes. Cassin writes: "By the way, cannot *Chordeiles Gunnisoni* be called *C. Henryi*—name some other bird after Lt. Gunnison—Henry ought to have one named after him and I do not like the idea exactly of giving him one of the Buteos—too many already named in that style—just give in, Professor, for once. I think a bird can be found to call *Gunnisoni*—I think moreover that Henry's claim is the superior!"

But to return to Bell. Cassin in naming the sparrow after him says he is "a gentleman possessed of a very extensive knowledge of natural history and whose attachment to the pursuit of which, induced him to make the visit to California which resulted in the discovery of this and other interesting birds."

One other name deserves to be mentioned among these early transcontinental travellers. This is A. L. Heermann, another member of the Philadelphia Academy. As a young man of thirty, Heermann went to California in 1849 and spent nearly three years "in making," to quote Cassin, "researches and collections with excellent judgment and great enterprise and has succeeded in bringing safely home the most extensive collections ever made in that country."

In a letter to Baird dated August 28, 1852, Cassin wrote with much enthusiasm: "Heermann has arrived from California with a collection of about 1200 bird skins. I have not seen them all but expect to tomorrow. I have a portion of them brought in his trunk among which are—a Hummingbird, *T. alexandri* which is new to our fauna, a Wren *T. mexicanus* and an undescribed finch [*Am. rostratus*]; also a Squirrel which LeConte says is new and the greatest kind of a lot of nests and eggs." Heermann's Gull was another novelty which he obtained. Later Heermann was naturalist on Lt. Williamson's party which surveyed the 32nd and 35th parallels in southern California on one of the Pacific Railroad Surveys. Heermann's paper dealing with his experiences with 125 land birds of California is the second great California ornithological contribution.

With the rush of settlers that followed 1849 and the military occupancy of the Pacific coast posts, numerous ornithologists found their way to California and knowledge of its birds increased apace. The great Pacific Railroad Surveys and the resultant report by Baird, Cassin and Lawrence, brought all the scattered contributions together in systematic form. But these operations belong to another period in the history of western ornithological development and are clearly beyond my theme. I feel that I owe you an apology as it is, for occupying so much time in presenting matter that is not new. Sometimes, however, well worn facts may be assembled in new combinations so that the resultant structure has some elements of novelty and that, together

with the fact that many details which I have given are new to most of those here present, must be my excuse.

In closing let us name over once more these sturdy pioneers who each in his way did what he could for the advancement of western ornithology: Lewis and Clarke, Townsend and Nuttall, Peale and Say, Gambel, Bell, and Heermann. Others equally worthy followed after, but they belong to another chapter. When we think of these men, the results they achieved, and the difficulties amid which they labored, and realize that we are following in their footsteps, striving to uphold and carry on the great work which they established on firm foundations, we recall the closing words of the beautiful tribute of Dr. Coues to the memory of John Cassin. "A higher trust than we perhaps appreciate is laid upon the few of us of this later day who pay devotion to the beautiful study of ornithology. It is no less than the keeping bright and untarnished, and transmitting to our successors, the name and fame of the science that absorbed such minds as these. May we prove worthy servitors, guarding with jealous care our trust, watchful that the vestal fires shall ever burn at the shrine we worship with a clear and steady flame."

CHARACTERISTIC BIRDS OF THE DAKOTA PRAIRIES

III. AMONG THE SLOUGHS AND MARSHES

By FLORENCE MERRIAM BAILEY

TO ME THE MOST interesting prairie birds were water birds. Their abundance is easily explained geologically, for where there are no high mountains to drain off the water, and the highest mountains in North Dakota are merely piles of glacial drift, then whatever water falls must lie in the surface depressions. Owing to the plowing of the ice sheet and the great number of moraines these depressions are numerous on the prairie, producing sloughs of various sizes, and marshes and lakes that afford ideal breeding grounds for water fowl. Would that every bird student could visit them and bring back intimate studies of the birds on their own home grounds! But though few are vouchsafed unconditioned days of field work, the least fortunate sojourners in North Dakota will find much to enjoy.

A surprising variety of water birds are seen even on the shallowest hollows of the prairie. Some of these small sloughs that would be called tanks farther west are not much larger than the buffalo wallows left since the days when fresh buffalo trails crossed the prairie to water. Two small roadside sloughs were near my part of Stump Lake. On one of them, the Rural Route mail carrier told me, a pair of strange birds were to be seen; one was almost always there when he passed along his route. When I drove over the prairie to investigate, there on the edge of the slough stood a Black-crowned Night Heron in its calm judicial pose, its black back contrasting strikingly with its broad ashy wings. Seeing that it was observed it rose and flew away across the prairie in the direction of a clump of trees on the shore. At the nearest house the people told me that the Herons had been in the neighborhood for several years and that they seemed to divide their time between the small slough and a larger one down the lake.

The other of the two roadside sloughs was down a road running between blue green spiky wheat and yellow green leafy flax fields with their delectable promise of acres of golden grain and fields of sky blue bloom. The slough could also be reached by cutting across pastures whose well worn cattle trails led to its water. A pair of brown Gadwall were so often seen on the slough that they doubtless nested in the surrounding pasture. They sat undisturbed when wagons passed only a few rods away, but if the horses stopped would fly off, the drake showing the characteristic black hindparts. When I went down to watch them one day the cattle coming to water with jangling cow-bell covered my approach so that I slipped in unobserved behind a chokecherry and junberry screen. The Ducks sat complacently on the pool though the cows half encircled it, one of them taking its stand only a few feet from the birds.

As I watched, the pair swam slowly along the edge of the slough feeding as they went, the drake showing the orange edges of his bill, the duck her black bill and orange feet. Hunger satisfied, they stopped to plume themselves, after which, sitting on the water close together, their big bills resting on their backs, Darby and Joan proceeded to nap. They napped not with one eye open but with both eyes winking so often that there was an alternation like that from the winking of the shutter of a camera—light—dark—light—dark. An excellent safety device it seemed, though there appeared little need, for they looked more like chunks of wood than birds, the white wing patch being the only exposed note of color. While I waited impatiently, Joan awoke and started to swim away, at which Darby, vexed, perhaps at the interruption of his nap, opened his big bill at her. Nevertheless he swam after her, though he repeated his eloquent remonstrance. What would they do next? High over the prairie appeared a flock of Franklin Gulls coming rapidly toward us. Joan, as if startled, rocked back and forth long enough to get up momentum, and then rose clear of the water. Darby followed unquestioningly, the pair, to my disappointment, flying away across the pasture out of sight.

In another place on a small slough between the road and a barn we surprised, and were surprised by, a Bittern. We stared at it in amazement, but though it watched us alertly, as we did not stop the horses it bravely stood its ground until we were out of sight.

One of the most interesting and characteristic of the small sloughs seen was only a few yards from the road, a grassy slough not more than twenty-five feet in diameter that seemed only the merest saucer in the level prairie. As we drove up we saw a Yellow-legs, a bird whose long yellow legs show to good advantage, standing on lush green marsh ground and whose neat fresh plumage makes it fit in well in a land of cool clean wheat fields. As we came alongside the little slough we were surprised by a loud outburst, the musical ecstatic song of an invisible Sora. Along the edge of the pool in the marsh grass we discovered a parent Coot swimming around with its droll little pink-headed youngster. And as we drove off, one of the fascinating Black-headed Terns wavered over the slough. Facinating, anomalous birds of both water and land! They were often seen flying over the prairie hunting insects where there was apparently no water in the landscape. What a thrill the sight of these black-heads gives! But the most enchanting, magic moment of all is when just the long pointed gray Tern wings become visible in a gray sky—as when the white forms of Gulls come out of a fog.

That our small wayside slough with *Hydrochelidon* and its comrades was but a fortunate incident on the prairie, the song of a Grasshopper Sparrow assured us as we drove on alongside the great wheat fields. Miles and miles of evenly headed blue green wheat, not a weed in sight, not so much as a jack-rabbit's trail to mar the perfect stands of grain—it was indeed a beautiful sight. And as the bright prairie sun warmed us we eagerly whiffed the cool prairie breeze that came over the fields laden with the nutty smell of the wheat and the delicate fragrance of the dwarf prairie rose, the wild prairie rose that hides itself at the foot of the wheat, clinging tenaciously to life even on the ground that man has usurped.

While the small roadside sloughs are but fortunate incidents of your way across the prairie, they serve to whet the appetite for the feasts offered by the marshes and lakes. Many of the North Dakota tule marshes seem merely black streaks in the prairie. But with what keen zest, what high hopes the bird lover sights one of them! Exciting black streaks! When looked down upon from the top of a prairie billow or even from a high wagon, they give up one of their many well guarded secrets—an interior basin of open water. According to the width of this basin they may be known locally as marshes or lakes, and many of the so-called lakes are merely wider marshes that one may wade across.

One long chain of black tule marshes, some denominated lakes but all making black streaks in the prairie, gave me a red letter day long to be remembered; for as we drove by them they were alive with water birds. At last I was on the famous breeding grounds of the Ducks and Grebes!

How eagerly I scanned each successive marsh in the chain, luxuriating in the sight, fairly gloating over it, trying to see each bird that hid her young in the tules, trying to extract from my more experienced companions the name of each last female Duck disappearing far across the sky, till finally our list of species included a large proportion of the Ducks known to breed in the locality, besides Grebes, Coots, Terns, two Cormorants flying from good fishing grounds back to the alkali lake in which were their breeding islands, together with Yellow-headed Blackbirds and Marsh Wrens. In addition we had seen the old nesting hole of a Golden-eye and had flushed a Blue-winged Teal from her nest in the grass, a nest with nine small brown eggs to which she circled back as we drove on. Beautiful tule marshes teeming with water fowl on their home grounds! What an intense satisfaction merely to see them in passing, to know that they were there! Before our wonderful day of marshes closed we were driving by those whose water was shimmering in the low slanting sunlight, the moving throng glorified by the golden light.

The day that we drove to Sheyenne River, in a secluded grassy marsh walled by a dense thicket from the fishermen's trail along the river bank, we flushed two Blue-winged Teal and a Bittern that seemed to have found safe nesting grounds in the protected harbor.

Before leaving this land of water fowl, I had the good fortune to spend a week between a marsh and a lake—Lake Elsie, at Hankinson. From across the lake were often heard the wailing cry of loons and the stentorian calls of Holboell Grebes, at times with a suggestion of the "hoarse Crow tones" Mr. Brewster speaks of, but oftener with a mellow bugle call. What a satisfaction it was to see the splendid birds! They completed the Grebe family for me, and all but the tiny Mexican species which we found in southern Texas had now been seen in North Dakota. While the Western Grebe—

AEchmophorus—is doubtless the king of the family, I had only maddening glimpses of him, once catching the gleam of a long white neck across a lake as its owner disappeared below.

Barring *AEchmophorus*, *holboelli* is head and shoulders above all the others in size and distinction. Its height above the water, its striking white throat-latch, and long red neck glowing in the sun make it a marked bird. What a contrast to the plain little Pied-billed we had been seeing in the tules leading around its tiny chicks! When *holboelli* puts down its head in preening itself the white chin does not show, and it may have to be distinguished from some of the marsh dwellers by its reddish body; but when the long reddish neck is raised to its full height, the bill becomes a short horizontal line surmounting a high vertical one—]—and even at a distance the white throat-latch makes a striking field character.

The Grebes we heard calling from across the lake lived in the tules of a marsh opening into the lake. When I went to the marsh young and old all seemed to be talking at once, but the loud grating *ker'r'r* and a liquid hen turkey note drowned the rest. In my anxiety to see better I made the fatal mistake of rising above my tule screen for a moment, and silence fell. The two parents immediately swam out into the lake, one with such a decided hump on its back that it must have been carrying off its young, as an alarmed parent had been seen doing a few days previously nearer at hand. After a long silence I caught one of the old Grebes with head turned looking my way, after which there was more silence; and when the loud talking was finally resumed it was behind a screen all too far out on the lake.

Though so interesting and distinguished, the lordly *holboelli* did not lessen my affection for the quiet little Eared Grebes with whom I had been on Stump Lake during the summer. Slender, gracefully formed little creatures, with the pointed crest and light ear patch, they would swim along near shore quietly looking at me, or make pictures of themselves out in the white luminosity of reflected cloud on the still lake, the pointed head and graceful neck charmingly mirrored below. Though so quiet and gentle, the pretty *californicus* is nervous, and, if you do not keep as quiet as it does, after turning alertly from side to side scrutinizing you, will curve forward on its bill and dive below, the silvery white of its belly showing below the reddish brown of its sides as it disappears.

The Eared has the Grebe habit of lying on its side on the water so that its white breast, whose soft silky feathers have been made all too familiar by milliners, gleams far across the water. Sometimes the bird turns on its side just long enough to flash across the water and then is gone below. When swimming around with the white hidden, its body glows reddish brown in the sun. On the rare occasions when one sits on the water with its long neck down, it is amusingly transformed into a snug little Duck.

While watching the Eared Grebes on Stump Lake I saw them going about either singly or in pairs until the middle of June, when I discovered a family of half-grown young swimming around some distance from shore. Seeing me, the old mother gave a harsh imperative *ka-keep, ka-keep*, at which the scattered brood started to swim in toward her making small wakes in the still water. As they were coming she gave a loud musical call, *hoy-ee-up'*, also heard on Sweetwater Lake, carrying far over the water.

When the Eared Grebes of Stump Lake had become familiar friends, two Horned Grebes appeared along shore and were seen there for three or four

days, when they disappeared as suddenly as they had come. They were noted with interest by a party of Eared Grebes who turned their heads to look longer at the strangers as they swam by. The visitors were generally so wet from constant diving that it was hard to tell their dry colors, and their water soaked crests were so flattened that they looked round headed. Their chestnut necks, however, were diagnostic. In strong sunlight their horns were intensely white, so white that they made a shining mark across the water.

The last time I saw the visitors, the bay that they had frequented, red with sunset light, was dotted with feeding Ducks and Gulls, but the little Grebes were apparently through feeding for the night and looked dry and in good form as they swam along close to shore, their crests dimly outlined in the fading light.

There was no good Grebe nesting ground on my section of Stump Lake, but on a small pond near another part of the lake we saw an Eared Grebe brooding eggs. She watched our approach nervously with crest down, craning her neck till it was long, slim, and snaky, as she peered this way and that trying to decide whether to go or stay. When her photograph had been taken, she dropped off the nest. As we stood quiet she soon returned and, with her hampering lobed feet, walked awkwardly around the rim of the nest before reseating herself. When we walked closer she rose and with rapid motions of the bill pulled some of the warm bedding over her eggs and then again dropped off into the water.

Later in the season, the last of July, on Lake Elsie we found a colony of Eared Grebes still brooding eggs. It was in the tule marsh at the end of the lake where the Loons and Holboell Grebes lived. To reach it we had crossed the lake in such a heavy wind that it was hard rowing across the white caps, and even the quiet water of the open marsh, generally alive with Coots, Grebes, Teal, and other Ducks, was deserted for the better windbreak of the tules. As we poled through the narrow tule lanes with their dark green walls, calls and cries and excited talk arose; but few of the inhabitants were seen except an occasional Coot swimming hastily away from the bow of the boat, a pair of Blue-winged Teal, and a handsome Ruddy Duck—well deserving the name—who swam off down a tule lane followed by his mate and five half-grown ducklings. But at a turn of the boat we found ourselves in a colony of Eared Grebes, and poled up to one nest after another in quick succession until we had excitedly counted ten. Each floating nest was anchored in a small clump of tules and seemed made of the beautiful water weeds we could see over the edge of the boat. All ten of the nests contained eggs, some two, some three. About half of the brooding birds had covered their eggs before slipping off their nests, and just after we had passed, two solicitous males were caught sight of among the nests, perhaps returning to look after uncovered eggs.

As we crossed a patch of open water we saw a pair of Yellow-headed Blackbirds examining an isolated bunch of tules with suggestive care. Deserted nests of a number of other birds were discovered as we poled through the shallow tule troughs. One that was taken for the nest of the Loon that lived on the lake was of soft materials and pronounced to be in the kind of place Loons like, "where they can slip over the edge into the water." Built between green tules was a high compact nest made of brown tules characteristic of Coots. When the nose of the boat was snubbed up into a green cul-de-

saw three Long-billed Marsh Wren nests were in sight, two old ones and one just begun, pretty domed structures with a round side entrance, woven of brown tules, cat-tail, cane leaves, and grass, with a soft lining of cat-tail down.

Another marsh of this series was close behind the farmhouse. A Chinese wall of high tules and reeds hid the open water behind it unless you looked down from the terrace above, and myriads of birds lived there in happy security although automobiles passed along the highway only a few rods from the wall. Enticing, irresistible Marsh Wren songs came from within till, perforce, I sallied out to gaze through the chinks in the wall.

The edge of the marsh was dry and skirted by cow trails, beyond which I made a short essay into the interior, using both hands to part the tules, for their crown of nutlets slap your cheeks with stinging blows as you crowd through them. While the footing was still firm enough to hold, I set up my camp stool and with the tules high above my head looked about my cage. The cool dark green waving rods were interwoven into a dense grill work with meshes so fine that, peer and twist and turn as you might—clumsy mortal—you could only guess at what was happening a foot from your nose!

A pair of Tule Wrens that came clambering along till close to my face, stood staring at me, their black wiry legs clinging to tules so far apart it seemed as if they must hinge outward. When satisfied with their scrutiny they walked away again absolutely out of sight behind the network in a foot or two. The miniature forest was full of the tantalizing talk and noises of a large invisible population. Ducks quacked so plainly I could see them (with my mind's eye), and heavy-bodied waterfowl went splashing into the water right there ahead of me—I knew just how they were lighting down. The flat *tub-tub* of Coots came so close I could picture their dark gray forms forging along between the tule rods in their business-like way. And, oh, that ecstatic outburst of the Sora, that loud clear musical run down the scale close to my ear, and not a tule turned! The Sora, the quaint, the droll, the surprising Sora! How good it was to hear him again!

Looking overhead I could see Swallows and Black Terns skimming along over the top of the marsh, and envied them their advantage. They could see down inside, perhaps, as they passed. But what were Rails to them? It was too aggravating. I must see! Rising with determination I crowded through the tules and crashed and crackled through the canes. A screeching, thundering railroad train might as well expect to surprise a Hermit Thrush! I had obtruded. Unbroken silence ensued. The moral was all too plain. Would you see? Cultivate a philosophic spirit, be content to sit and listen to the voices of the marsh; let the fascinating, mysterious, bewildering voices encompass you and—hold your peace. Spirits of the marsh—it is their magic forest. Let no mortal intrude.

But a marsh like a mountain will not be exorcised and, “when the Red Gods mix their medicine”, calls so insistently that you can but obey its summons. That open water in the center of the marsh called me imperatively—many a Duck had I seen curving over to settle down where it must be. The residents had not been encouraging. One said that you might take a step and go down up to your neck. Another, less conservative, told of a man who had driven into the marsh adjoining this and been sucked down by the bog, man, horses, and wagon disappearing forever! To prevent such an unpleasantness, one familiar with bogs gave me a few careful directions: “always step ahead of yourself, never put down a foot so you can't draw it back, and

if you go in a hole, back up; turn your foot sidewise and bend the tules down under it; steady yourself with a handful of tules."

With these valuable directions in mind I made my way laboriously through canes and tules and along interior bays of marsh grass. Though none of the wary birds waited for me, a startled yellow ball bounded up into the air ahead of me and coming down proved to be a Maryland Yellowthroat; I caught it giving its flight song in this explosive manner later. Tule Wren parents fairly held me up in the canes, demanding my business. There were many opportunities to compare the Tule Wren's mechanical round, *clatter, clatter, clatter, clatter*, with the Short-billed Wren's *cha-cha, chat-ah-cha*, or *chee-chut, chee-chut, chee-chut, chee-chut, chee-chut, chee-chut, chee-chut*. One of the Short-bills, singing out of sight in the marsh grass bordering the tules, at my answering whistle came out into view, a little light-colored ball on a grass stem. Excited by what he saw and heard he came on toward me, his tail flattened over his back, singing hard, droll midget, bent on finding the intruder and having it out with him on the spot; for this was his patch of marsh grass!

In working my way through the marsh, wading from one cane island to another, there came one glorious moment when the fact that just then there seemed no footing short of the orient was instantly forgotten, and visions of disappearing farmers and teams vanished, for whizzing over the tules only a few yards away came a Nelson Sparrow, a new bird to me, giving his loud flight song, his startling, original outburst, that struck the ear like a bang of cymbals—'Tsang'-ger-ee.

While this exciting outburst was still ringing in my ears, the old explorer of bogs joined me, and carefully testing footholds and ordering me to step in his boot prints, led me out to the edge of the open water. A female Mallard burst from her nest beside us as my guide bent down a mass of long tules to serve as a platform, a very quaking platform it must be acknowledged, from which I could look out over the interior lake. At last I had arrived!

The water was so shallow that clumps and streaks of tules afforded shelter for the Coots and Ducks. Part of the surface of the water was covered with beautiful pinkish algæ. Surprised beside a wisp of tule, a Black-crowned Night Heron, crouching low as if trying to make himself inconspicuous, was in the fullest beauty of his nuptial plumage, lovelier than I had ever imagined he could be, with delicate yellow skin around his face and white nuptial plumage curved gracefully over his back. Meanwhile a less experienced young one, a nondescript gawky long-legs, made itself the one object in the landscape by trying awkwardly to climb up a clump of tules. Swallows and Black Terns were skimming over the water, and a Tern with food dangling from its bill flew straight across the lake to the tules; how I longed to follow! A Ruddy Duck with a brood of ducklings sat on the water in a narrow tule lane. As we watched a handsome male Ruddy swam eagerly in as if to join his little family, but to my surprise and indignation was driven back by the mother.

On emerging from the tules we climbed a low sagebrush hill from which we had a generalized view of the marsh and lake, whose blue water changed to green near the opposite shore. Across the lake the heads of a band of Red-heads caught the sun and glowed splendidly. Pied-billed Grebe, Blue-winged Teal, and a great number of Ducks too far away to be named gave me the satisfaction of knowing how thickly populated was this hidden lake. There had need be a Chinese wall around this home of the waterfowl!

The next night at half past eight when the red light was fading in the west, a Nelson Sparrow was still banging cymbals in the marsh, and two Great Blues and a Night Heron apparently starting on their nightly hunt flew overhead between the marsh and the largest of the lakes.

Washington, D. C., May 23, 1915.

NEW AND INTERESTING BIRD RECORDS FROM OREGON

By STANLEY G. JEWETT

FROM April to September, 1915, the writer was engaged in field work for the United States Biological Survey. Work was conducted through the mountains and narrow valleys of east central and northeastern Oregon. Large collections of both birds and mammals were made, and extensive notes taken. The notes on the birds mentioned below are thought to be of sufficient importance to warrant publication at this time.

Canachites franklini. Franklin Grouse. This species of grouse is fast disappearing from its range in northeastern Oregon. During the early part of September I hunted, unsuccessfully, for specimens along the headwaters of the Imnaha River in Wallowa County, where the birds were formerly common and are still known to occur. I heard several reports of the occurrence of Fool Hens, as they are commonly called, but not until September 9, did I establish an authentic record, on which date I found the tail and several feathers of an adult male where some predatory animal had killed it. The locality was about a mile up Cliff River above its junction with the Imnaha River in the Wallowa Mountains. This grouse is undoubtedly often seen by prospectors and sheepherders in this section, as most of them are familiar with the Fool Hen as differing from the Richardson Grouse (*Dendragapus o. richardsoni*), which is common throughout the mountains of northeastern Oregon.

Selasphorus platycercus. Broad-tailed Hummingbird. This species was noted but twice; first at Dayville, on June 27, where a fine adult male was seen hovering about some honeysuckle flowers on the hotel porch several times during the day. This bird was seen at such close range that identification was sure by one familiar with the species. On June 30, 1915, an adult female was taken at Mount Vernon. This bird when shot was hovering over some flowers in a small opening in a cottonwood grove on the bank of the John Day River.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. This flycatcher was met with twice in eastern Oregon. Two were seen in juniper trees near Prineville on June 3. An adult male was taken at Twickenham, in the John Day Canyon, on June 25.

Dolichonyx oryzivorus. Bobolink. On July 23, 1915, I found a colony of about twenty-five of these birds on the Griggs ranch, three miles west of the town of John Day. This colony is said to have been present each summer the past three years, during which time it has increased in numbers. Two females were taken for specimens. There is an old breeding colony of Bobolinks in Harney Valley near Burns; and at the Oregon Agricultural College I recently examined the skin of an adult male in spring plumage that was taken by Professor Shaw in Union County; but the label lacks the date of capture. As large tracts of our arid valleys are brought under irrigation it will be interesting to note what the effect will be on this meadow loving bird.

Pinicola enucleator montana. Rocky Mountain Pine Grosbeak. On September 9, 1915, several of these grosbeaks were seen in the Hudsonian Zone near the junction of Cliff and the Imnaha River in the Wallowa Mountains. A female in worn summer plumage was taken.

Junco hyemalis hyemalis. Slate-colored Junco. On April 12, 1915, a female of this eastern junco, probably a late spring migrant off her regular route, was taken in the willow brush along the south bank of the Columbia River on Miller's Ranch at the

mouth of the Deschutes Canyon. This bird was with a small flock of *Junco h. connectens* when shot.

Vermivora r. gutturalis. Calaveras Warbler. Two males of this warbler were taken on Miller's Ranch, mouth of the Deschutes River in Sherman County, on April 16 and 17, 1915. On August 21 one was secured at McEwen in Baker County. All three specimens were collected while feeding in willow thickets.

Setophaga ruticilla. Redstart. Two immature males of this warbler were taken in the willow thickets along Powder River at McEwen on August 19 and 20, 1915.

Dumetella carolinensis. Catbird. An adult male catbird was taken at Mount Vernon, Grant County, on June 30, 1915. Another was seen flying across the road between John Day and Prairie City on July 8, 1915.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. An adult male in very ragged plumage was taken at Mount Vernon on July 1, 1915. It was found on a rim-rock on the dry slope of the valley at four o'clock in the morning, at which time it was singing lustily.

Regulus calendula calendula. Ruby-crowned Kinglet. While ploughing through about twelve inches of new wet snow in the lodgepole pine forest on Lookout Mountain, in Crook County on June 12, 1915, I was attracted by the cheerful song of a Ruby-crowned Kinglet over my head. Upon looking for this bird I discovered two kinglets instead of one, and one of these was just disappearing in a clump of moss about thirty feet above the ground. The interesting thing about this particular clump of moss was that it contained the nest of this pair of birds, and furthermore the moss was growing on the twigs of a dead and leafless pine that stood some distance from any living tree. The nest was well hidden in the moss, and on this date was about ready for the lining, with both birds on the job of construction.

Hylocichla guttata auduboni. Audubon Hermit Thrush. Near the mining camp of Bourne, Elkhorn Mountains, Baker County, I discovered the nest and eggs of this thrush on August 3, 1915. The nest was saddled on a limb next to the trunk of a small balsam fir, about eight feet from the ground. The nesting tree was growing in dense woods on the mountain side at about 6000 feet altitude. The female was flushed from the eggs when the nest was found.

Ixoreus naevius naevius. Varied Thrush. On August 4, 1915, I collected a male of this species near Bourne in the Elkhorn Mountains. Several Varied Thrushes were seen in the Wallowa Mountains, near the junction of Cliff and the Imnaha River on September 7. These are rather late for breeding records; but a Varied Thrush does breed in these mountains, as my note book for 1907 contains a record of a nest containing four large young about a week old found at Anthony, Baker County, on May 14, 1907. Unfortunately no birds were taken at the time, but I still have the nest in my collection as a record. The nest was taken May 27, 1914, after both young and parents had left the locality.

Portland, Oregon, December 6, 1915.

A PERSONAL SUPPLEMENT TO THE DISTRIBUTIONAL LIST OF THE BIRDS OF CALIFORNIA

By WILLIAM LEON DAWSON

WE ARE all under the deepest obligation to Dr. Grinnell for his painstaking report upon the distribution of California birds. Dr. Grinnell is, as every member of the Cooper Club knows, exceptionally well qualified for this important task. Add to his intimate knowledge of California birds afield, an exhaustive acquaintance with published literature, and you have an equipment which has made of this Distributional List as perfect a work of its kind as could well be hoped for.

But the very perfection of opportunity represented by this effort affords,

in the last analysis, a most comfortable assurance to the humbler student of Californian birds that his own efforts need not be considered wasted, and that he, too, may hope to make some important contribution to knowledge. For not even yet is our knowledge of the birds of California perfected. Indeed, our greatest obligation to Dr. Grinnell is for his willingness to report *progress* in a realm whose mastery is confessedly incomplete. We have now a basis of attack upon our problems, a standard by which to test our own knowledge, a central depot signalized, to which we may bring our own plunder.

We predict, as a direct outcome of this publication, a flood of additional offerings from other workers. For one of the most real restraints operating upon any would-be contributor, as to the columns of THE CONDOR, is his uncertainty as to the value or pertinency of his offerings. No one wishes to burden the pages of a magazine with information which other people already possess. Therefore a silence, prolonged and painful, on the part of most observers.

For my own part (though not one of the silent kind) I have been both surprised and pleased to see in how many cases my scattered gleanings in California are able to bear out or modify, or even possibly contradict, the conclusions set forth in Avifauna No. 11. I deem it fitting, therefore, to offer a few of these records below, as a modest supplement to the standard of authority now set up. In doing so, it is needless to add, the writer is not moved by any captious spirit of criticism, nor by any thought of discrediting the importance of what has been done. My contribution is but a trifle in comparison with the whole; and it is, moreover, just such a contribution as forty others should make. I hope that many others may speedily be moved by this pleasant challenge to formulate their own conclusions in this fascinating and important field. Only by reaction is life manifested. A worker is never better pleased with his own efforts than when they have proved provocative of effort in others; and the sincerest compliment which we can pay Dr. Grinnell is to make an early revision of his Distributional List possible and necessary.

In the following pages I offer only such considerations as would serve to strengthen the evidence for the inclusion of certain rarer birds in the California list, or else to extend or re-define the ranges of certain species, or such as for any reason lead me to differ in a material way from Dr. Grinnell's conclusions. In most cases, therefore, I find it necessary to quote directly from the new Distributional List, in order to bring out clearly the point of difference or change.

Aechmophorus occidentalis. Western Grebe. Confirmatory and extending. A pair seen on Diaz Lake near Lone Pine, Inyo County, on June 18, 1911; Horse Lake, Lassen County, June 5, 1912 (2); Goose Lake, Modoc County, June 11, 1912 (3); San Joaquin Swamps, Merced County, June 6, 1914 (chain creaking chorus of birds, probably breeding); El Pizmo, June 25, 1914.

Gavia immer. Common Loon. "Common winter visitant". Should also be noted as a summer straggler along the coast. Farallon Islands, June 2, 1911; El Pizmo, May 11, 1912 (eleven birds seen); June 25, 1914; Goleta, May 29, 1915; June 15, 1915 (specimen, adult ♀, taken). (See also Willett: "Birds of Pac. Slope of So. Calif.")

Larus hyperboreus. Glaucous Gull. One speaks with diffidence of sight records of the Glaucous Gull, because hoary adults of some other species, usually *L. glaucescens*, are at least as common as indubitable *hyperboreus*. Yet I should say that juvenals of this species are almost certain to be seen on the Santa Barbara beach at some time during the course of any season. These are transient members of a great company which submits to closest scrutiny. April 27, 1912; Aug. 4, 1912; May 1, 5, 14, 1913; and April 1, 1914, are typical Santa Barbara appearances.

Larus philadelphia. Bonaparte Gull. Also a straggler in summer: Horse Lake, June 5, 1912, two immature birds; Goose Lake, June 20, 1912, three immatures.

Xema sabini. Sabine Gull. Occasionally ventures ashore. Mr. Torrey told me that he had seen a specimen on the Estero, but I did not learn the date. Commander and Mrs. Parmenter saw a bird at the mouth of Romero Creek on the 4th of June, 1915. On the 25th of August, Prof. Lynds Jones and I encountered an immature Sabine on the Estero at Santa Barbara under exceptionally favorable circumstances. The bird lighted upon the ground at close range after it had traversed the marsh in a rather vacillating fashion; but when pressed too closely put off to sea again.

Sterna caspia. Caspian Tern. "Rather rare winter visitant and migrant". A company of some twenty birds haunted the flats off the mouth of Davis Creek on Goose Lake in 1912, and gave the impression that they were only waiting for decent weather as an excuse for nesting. We had them under observation from the 10th of June on, but devastating storms occurred on the 22nd, and there were no signs of progress when we last saw them on the 24th. Other "unseasonable" records are: Los Baños, June 4, 1914 (1 bird); Santa Barbara Estero, May 27, 1915 (1 bird); and Santa Barbara (Sandyland), August 6, 1915 (1 bird).

Sterna antillarum. Least Tern. A colony of about forty pairs bred with indifferent success at the Sandyland beach, about ten miles east of Santa Barbara in the summer of 1915.

Hydrochelidon nigra surinamensis. Black Tern. "Occurs rarely on the seacoast during migration". The autumnal movement of this species in 1915 formed a marked exception to the rule at Santa Barbara. On the 25th of August we saw thousands of these birds feeding over the kelp beds just off shore, and a few of them drifted onto the esteros. As late as the 11th of September they were still plentiful on the lagoons, especially at Santa Barbara and Sandyland, but only a scattering few appeared over the kelp.

Oceanodroma homochroa. Ashy Petrel. Confirmatory. A specimen was picked up dead on the beach at Sandyland, near Santa Barbara, May 5, 1915; not preserved.

Pelecanus erythrorhynchos. White Pelican. A single bird appeared on Laguna Blanca near Santa Barbara, December 27, 1914.

Anhinga anhinga. Water Turkey. "One living individual scrutinized by Allan Brooks, February 9, 1913, at Potholes", etc. Two other individuals were also scrutinized by myself (under 8-power binoculars) at the same spot on the 12th of February, 1913. The birds were at a considerable range, but their behavior contrasted strongly with that of the Farallon Cormorants which accompanied them.

Mareca americana. Baldpate. "Common winter visitant". I found the Baldpate breeding commonly at Davis Creek in Modoc County, where I took two sets of eggs, one of nine, fresh, June 20, 1912, and one of eleven, advanced in incubation on June 24, 1912. Others, evidently breeding birds, were seen near Eagleville in the Surprise Valley, July 12, 1912.

Querquedula discors. Blue-winged Teal. "Rather rare transient and winter visitant, occurring altogether on fresh water". . . . "Santa Barbara (Torrey, Condor, XI, 1909, p. 173). Mr. Torrey's record was of two males and one (presumed) female seen on Laguna Blanca and the Estero from January 21 to May 1, 1908; and from December 6, 1908, to March 16, 1909. A notable movement of this species was witnessed by Prof. Lynds Jones and myself at Santa Barbara on the 25th of August, 1915. We were wading about in the "Estero", a brackish backwater area adjacent to the railroad yards, and saw several small flocks of ducks which we took to be Blue-winged Teals. While we were deliberating, a splendid flock of about twenty birds, all males, charged in and settled before us, allowing careful inspection with binoculars. The surprising thing about the birds is (I am not at all familiar with the species at this season) that they had sufficiently recovered from their eclipse plumage to be easily recognized as males, notably by the appearance of the white crescent between eye and bill. Unfortunately the locality was not kept under close observation, though other flocks which included females were seen as late as the 11th of September at the same place. November 4, 1911, and May 7, 1915, are my only other dates for Santa Barbara.

Dafila acuta. Pintail. "Abundant winter visitant", etc. Considering how early this species clears for its northern breeding grounds in the spring (the bulk of them quit the Santa Barbara coast in February, though stragglers appear into May), I was astonished at the numbers which returned in late August of the year 1915. On the 25th,

coincident with the notable movement of Blue-winged Teals, was a phenomenal outpouring of Pintails. Some of the flocks looked in at the Estero or Laguna Blanca, but most of them paralleled the coast offshore, moving east (and so south). The males were in full eclipse plumage at this time, and for several weeks thereafter were difficult to distinguish save by bearing.

Marila collaris. Ring-necked Duck. "Now rather uncommon . . . fourteen records". From the unfailing regularity with which a small group of these birds occupies a certain corner on Laguna Blanca during late December, I have little doubt that we have been seeing practically the same birds every winter for the past five years. Seven birds constitute the nucleus of this flock. Only once have I seen it elsewhere, on Round Pond, 12 miles west of town, November 4, 1911.

Dendrocygna bicolor. Fulvous Tree-Duck. "Interior valleys southerly". Mention should, I think, be made of the occurrence of this bird on the sea-beaches during migrations: Santa Barbara, May 2, 1912 (9 birds photographed on beach at Sandyland); August 16, 1913; May 5, 1915.

Ixobrychus exilis. Least Bittern. "Only four definite breeding records". On the 23rd of May, 1912, H. W. Carriger, Fred Truesdale and the writer, each took a nest with three eggs near Dos Palos. Again in 1914, May 30, three nests with eggs were found near Los Baños by Mr. Rossiter M. Wheeler and William O. Dawson, n/5, n/1, and n/2. The bird undoubtedly breeds also at Santa Barbara where it is of regular occurrence. I noted it on the 29th of May, 1915.

Lobipes lobatus. Northern Phalarope. Additional records are: Dos Palos, May 17, 1912 (12 birds photographed); Goose Lake, June 24, 1912 (5 birds in high plumage); Surprise Valley, July 12, 1915.

Himantopus mexicanus. Black-necked Stilt. "Common summer visitant to interior localities". According to Mr. Bradford Torrey, who conducted me to the locality on the 21st of August, 1912, at least two, and possibly three, pairs of Stilts had bred in the Estero that season. The Estero, I need scarcely remind CONDOR readers, is a brackish backwater lagoon (of a high degree of uncleanness), which is flanked by warehouses, railroad yards, and the City gas-works of Santa Barbara. The birds to the number of ten or a dozen were there on the 21st and again on the 22nd of August, and I judged many of them to be young of the year.

Gallinago delicata. Wilson Snipe. In a swamp near Lone Pine in Inyo County, we heard on the 17th of June, 1911, the "hooting" nuptial song of the Wilson Snipe; and the day following flushed a mother bird in charge of a chick, which had undoubtedly been hatched in the near vicinity.

Pisobia maculata. Pectoral Sandpiper. "Rare spring and fall migrant", with exact citations. Rare, but not so rare, say *rareish*. Recent records are: Santa Barbara, August 20, 1913; Elkhorn (Monterey County), October 11, 1913 (6 birds photographed); La Patera (8 miles west of Santa Barbara), August 25, 1915.

Pisobia bairdi. Baird Sandpiper. "Rare fall migrant". The species is of infallible occurrence along the Santa Barbara coast in autumn, where it is at least as certain, if not as abundant, as the Red-backed Sandpiper. Fall appearances range from July 25 (1914) to September 4 (1911). I suspect that its appearances in spring are quite as regular, although, naturally, more condensed. My meager records (due merely to lack of attention) are April 27, 1912, May 2, 1913, May 5 and 7, 1915.

Pelidna alpina sakhalina. Red-backed Sandpiper. The Salton Sea appears to be an unrecorded wintering station. Mr. Brooks and I found them in company with Western (*Ereunetes mauri*) and Least (*P. minutilla*) Sandpipers, near Mecca in January (Jan. 30, 1913).

Totanus melanoleucus. Greater Yellow-legs. "Many records . . . almost span the summer". Then June 30, 1912, Eagleville, Modoc County, comes pretty nearly to being the keystone of the arch; but Grinnell is quite right in saying that these midsummer records have no breeding significance.

Oxyechus vociferus vociferus. Killdeer. "Abundant resident of suitable localities throughout the State". True; but the term 'resident', unqualified, conceals the fact that the population (at least of southern California) is heavily augmented in winter, presumably by influx of extra-territorial migrants. There are forty times as many Killdeer in winter as in summer along the Santa Barbara coast.

Aegialitis nivosa. Snowy Plover. "Occurs sparingly in the interior", with citation,

none from the Northeast. Of regular occurrence at Goose Lake and manifestly breeding (or trying to do so; the weather was very bad) in June, 1912.

Podasocys montanus. Mountain Plover. Two coastwise appearances of single birds on the Santa Barbara beach must also be reckoned as casual: October 19, 1912, and August 25, 1915.

Parabuteo unicinctus harrisi. Harris Hawk. "Summer visitant to the valley of the lower Colorado River; two records for the California side". Also winter "visitant" and probable resident in the same region. Mr. Brooks and I encountered these birds repeatedly during our stay at Potholes in February, 1913 (records February 9, 10, 11, and 12). On the 12th I saw three at one time seated. They kept to the taller timber of the Laguna backwater, and we were unable to secure specimens, though on another occasion I did study one with binoculars from the foot of the tree in which he stood.

Buteo swainsoni. Swainson Hawk. "Recorded north to Shasta Valley . . . east to Independence Lake". A nest found June 11, 1912, in a yellow pine near Goose Lake was not yet occupied, although in recent repair, with the birds in watchful attention. Succeeding bad weather seemed to discourage the birds utterly, and no eggs had been laid at the time of our departure, June 29, although we frequently saw the hawks in the neighborhood. Birds also seen near the crest of Sugar Hill.

Aquila chrysaetos. Golden Eagle. "Rare or wanting east of the Sierran divide". Encountered in the Pit River Valley, in southern Alturas County, June 5, 1912; and sparingly in July along the crest of the southern Warners (July 2, 1912, near Eagle Peak; July 12).

Falco mexicanus. Prairie Falcon. Dr. Grinnell correctly states the breeding range of this species as Sonoran, but it is perhaps worth while to note its habitual invasion of Boreal zones in summer. Dr. Fisher records the Prairie Falcon from Big Cottonwood Meadows (alt. c. 9800), and Whitney Meadows (alt. c. 9800) in August (Birds of the Death Valley Expedition, May, 1893, p. 40). We saw it repeatedly in late June and in early July in the Warner Mountains, and on the 5th of July, 1912, as we stood on the summit of Warren Peak, a Prairie Falcon passed slowly within fifty feet of us, then circled above us at an altitude of 10,000 feet (zonally equivalent to an altitude of 13,000 in the southern Sierras).

As an extreme of the opposing tendency I would instance the regular nesting of a pair of these birds on the southern or seaward slope of the Santa Ynez Range, near Santa Barbara. This pair hunts over the coastal lowlands, and I have caught them on three occasions on the crest of the sea cliff, and once over the ocean.

Falco peregrinus anatum. Duck Hawk. This species is also a rare but regular breeder on the innermost coast ranges separating Kern and San Luis Obispo counties. On the 6th of April, 1914, I took a set of four eggs of the Duck Hawk in western Kern County, at least sixty miles distant from the ocean, in a bee line.

Pandion haliaetus carolinensis. American Osprey. "Two definite nesting localities in the interior, Eagle Lake . . . Kaweah River". Is pretty certain also to nest on Goose Lake, where we saw a bird at close range, June 17, 1912.

Glaucidium gnoma grinnelli. Coast Pygmy Owl. Either this form or one having plumage a thousandth part of a shade lighter occurs commonly enough in the Santa Ynez Range near Santa Barbara. I have a specimen, a male, taken by Mr. Allan Brooks in Los Canoes Canyon, January 2, 1913. Other record dates are December 27, 1910, January 11, 1913, and September 18, 1915. Yet of *G. g. grinnelli* Grinnell says, "occurs possibly south as far as Santa Margarita" (northern San Luis Obispo County); while of *G. g. californicum* the nearest record station appears to be in the San Gabriel foothills of Los Angeles County.

Chordeiles acutipennis texensis. Texas Nighthawk. "Common summer visitant". On the 31st of January, 1911, near Long Beach, I described a Nighthawk which Mr. C. B. Linton promptly identified as the Texan. It was early dusk and the bird was under observation for several moments as it quartered the sky. It certainly was not a Poorwill.

Chaetura vauxi. Vaux Swift. "Common summer visitant locally to the northwest humid coast Transition". The occurrence of Vaux Swifts at Kenawyers on the middle fork of the Kings River, July 9, 1913, would argue that there are also isolated breeding colonies of these lesser swifts in the Sierras; and this the knowledge of their breeding habits in the Cascade Mountains would lead us to expect.

Archilochus alexandri. Black-chinned Hummingbird. "And recorded, perhaps casually, north to Honey Lake and Camp Bidwell". This strikes one as being a needlessly cautious qualification of a species which breeds in Upper Sonoran areas straight through to British Columbia. We encountered this species in the Warners July 3 and 9, 1912, and at New Albany, Oregon, June 27, 1912.

Calypte costae. Costa Hummingbird. "Common summer visitant . . . northwest to Santa Barbara . . . Rare north of the 35th parallel west of the Sierras". From the circumstance of having encountered this species at La Panza (in central San Luis Obispo County) two different seasons, viz., April 21, 1912, and April 20, 1914, I should infer that the species might be a breeding bird and of regular occurrence at that station. We saw it also near Pozo, April 30, 1914.

Stellula calliope. Calliope Hummer. "Summer visitant . . . south . . . to the San Bernardino Mountains". On the 26th of May, 1913, I observed the courting evolutions of a male Calliope Hummer just north of Idyllwild in the San Jacinto Mountains. Other birds were seen June 5th and 6th in the Tahquitz Valley, and there can be little question that these were breeding birds.

Tyrannus tyrannus. Eastern Kingbird. "Rare transient visitant; two records". We encountered this bird at two points on the Modoc-Lassen trip of 1912; one June 15, on the north fork of the Pit River about eight miles above Alturas, and the other June 30, near Eagleville, in the Surprise Valley. Both of these, in all probability, represented breeding birds.

Tyrannus vociferans. Cassin Kingbird. "Fairly common resident . . . northwest to Santa Barbara". This is perhaps based on Willett's summary¹: "Winters regularly north to Santa Barbara". In a residence of five years at Santa Barbara I have not seen any Kingbirds in winter along this coast. Dr. Evermann, for two years resident at Santa Paula, speaks² of both species, *T. verticalis* and *T. vociferans*, as "summer residents" only. Streator, writing of Santa Barbara in 1886, says³ under *Tyrannus verticalis*: "A very few remain through the winter". This record would undoubtedly be referable to *T. vociferans*, but the presence of this species in Santa Barbara in winter must be a rather irregular occurrence.

Grinnell's further statement: "Occurs commonly as a summer visitant, and breeding, at Paicines, San Benito County", gives one the impression that such breeding is a rare and isolated instance; and this is, in fact, the only reference he makes to its breeding outside of the "San Diegan district". As a matter of fact the Cassin Kingbird is exceedingly abundant as a breeder throughout the northeastern quarter of San Luis Obispo County. It is found also throughout the interior sections of western Santa Barbara County, and the probabilities are that it enjoys a continuous breeding range from western Santa Barbara county, through central and eastern San Luis Obispo, eastern Monterey, and San Benito counties to western Merced County. I found the bird west of Los Baños, just out of the foothills, on the 21st of May, 1914.

A correspondent, Mr. Fred Truesdale, living near Shandon in San Luis Obispo County, reports the taking of a set of five "Western" Kingbird's eggs on the 28th of March, 1914. The report is trustworthy as to date, and I have seen the eggs, but I suspect they are those of *T. vociferans*.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. "Northernmost record east of the Sierra Nevada: Honey Lake, Lassen County". We found this bird in a stretch of sage and juniper a few miles north of Horse Lake, June 5, 1912.

Nuttallornis borealis. Olive-sided Flycatcher. "Breeds west to the coast from Monterey County northward". The Olive-sided Flycatcher breeds regularly on the seaward slopes of the Santa Ynez Range near Santa Barbara. We took a set of three eggs from a live oak tree in Los Canoes Canyon June 5, 1915, at an elevation of about 2600. When it is recalled that Bell Sparrows and Black-chinned Sparrows breed locally *above* this point, one may realize how far within the limits of "Upper Sonoran" this record really comes.

Empidonax traillii traillii. Traill Flycatcher. "Summers in . . . Lower and Upper Sonoran . . . rarely low Transition". "Breeds . . . well into the foothill regions but

¹Birds of the Pacific Slope of Southern California, by Geo. Willett; 1912, p. 62.

²A List of the Birds Obtained in Ventura County, Calif., by Barton W. Evermann, Auk, vol. III, April, 1886, p. 180.

³Ornithologist & Oologist, vol. II, May, 1886, p. 66.

apparently seldom above limits of Upper Sonoran". This statement, it seems to me, is unnecessarily guarded, in view of the fact that the Traill Flycatcher breeds in the Yosemite Valley in close association with the Lincoln Sparrow (*Melospiza lincolni lincolni*) and the White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*). On June 10, 1914, I found a nest of the last-named, within a stone's throw of a Traill Flycatcher's nest on the banks of the Merced (altitude 4000).

On July 18, 1913, I photographed (but did not take on account of advanced incubation) a set of Traill Flycatcher eggs at Simpson Meadows on the Middle Fork of Kings River at an altitude of 6000 feet, and in the heart of the Sierras. The Simpson Meadows are confessedly a faunal hodgepodge, but a place where Thick-billed Sparrows (*Passerella iliaca megarhyncha*), Townsend Solitaire (*Myadestes townsendi*), Sierra Grouse (*Dendragapus obscurus sierrae*), Red-breasted Nuthatch (*Sitta canadensis*), Sierra Junco (*Junco oreganus thurberi*), and Sierra Hermit Thrush (*Hylocichla guttata sequoiensis*) breed, is at least *high Transition*.

Cyanocitta stelleri frontalis. Blue-fronted Jay. "On the mountains of southern California from those of Ventura County southeast", etc. "Partial winter movement . . . thus *frontalis* has been recorded in winter from Santa Barbara". I am persuaded that some form of *Cyanocitta* breeds west, at least to the center, in Santa Barbara County, and that Santa Barbara birds are merely visitors from over the range (Santa Ynez). These are, however, my only records: Foxen Canyon, April 2, 1912; April 2, 1914; Solvang, April 27, 1912; Santa Barbara, March 29 and April 28, 1913.

Corvus corax sinuatus. Western Raven. "Common resident locally throughout the State". It seems to me that this statement is both too general and too generous as a summary of the present status of the Raven, even when qualified further: "now scarce or absent in the most thickly settled counties". The fact is that one may travel counties on end in California, and those by no means the most settled ones, without once seeing a Raven. We travelled a thousand miles in the northeastern quarter of the state in 1912 without seeing a single bird. And if they were once common in the Sierras (see Fisher, "Birds of the Death Valley Expedition", 1893, pp. 70, 71), they are no longer so. I saw no Ravens in a month's sojourn in the Cottonwood Lakes region in 1911, nor in another month in the region focussing on the North Palisade Peak, in 1913. The two "associational" keys to the current distribution of the Raven in California are *cattle* and *sea-birds' eggs*, and the Raven holds no dwelling where neither of these factors is present.

Corvus brachyrhynchos hesperis. Western Crow. "Not recorded east of the Sierran divide except . . . Fort Crook . . . and Eagle Lake". Quite to our surprise we found Crows at Davis Creek in Modoc County from June 10th on. They had evidently bred in the vicinity. The species occurred also at Eagleville (June 30, 1912).

Cyanocephalus cyanocephalus. Pinyon Jay. Santa Barbara must be credited with another, or perhaps two, of these sporadic occurrences. On October 9, 1914, a flock of about 200 flew westward directly over Los Colibrís. About a week previously I had seen a large flock which I took to be of this species as they were outlined against the Santa Ynez Range at a distance of two miles.

Dolichonyx oryzivorus. Bobolink. "Rare, transient; four records". On June 30, 1912, we found Bobolinks still in song and evidently breeding in the meadows near Eagleville, Modoc County. We did not, however, attempt to determine the size of the colony, but I remember passing down a lane with two males on one side and one on the other, singing.

Molothrus ater obscurus. Dwarf Cowbird. Westernmost citation of occurrence, "Los Angeles and Ventura counties". Is also a rare breeder in the vicinity of Santa Barbara. On the 13th of September, 1912, I took a young female in patchy transition plumage from a flock of Redwings at Carpinteria. On August 25, 1915, Professor Jones and I found a bird in pure juvenal plumage dancing close attendance on a group of horses pastured ten miles west of Santa Barbara. Near the same spot I saw a fully matured bird riding about on the back of a hog, October 28, 1911.

Agelaius tricolor. Tricolored Redwing. "Not recorded east of the Sierran divide, save as breeding at Lake Tahoe". We found them in great numbers along the south fork of the Pit River, in Modoc County, June 5, 1912.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow. "Common summer visitant to the Boreal zone". Its nesting in Yosemite Valley with Traill Flycatcher has

already been noted. I took a nest of four eggs on the banks of the Merced, June 10, 1914, at an altitude of only 4000 feet, a notable departure due to the peculiar configuration of this "caved in" country.

Zonotrichia albicollis. White-throated Sparrow. "Rare winter visitant"; 17 records enumerated. These sparrows have become rather common in Santa Barbara this fall, to judge from their drawling notes; but they are exceedingly shy, and must be caught unawares to be seen. But as I write these words (December 8, 1915) a handsome fellow is feeding upon the ground within ten feet of my study window.

Progne subis hesperia. Western Martin. "Distributed as a breeding species along, and west of, the Sierras". Then Honey Lake in Lassen County may be farther east and north than any previously recorded breeding station. We found a single pair on the 4th of June, 1912, occupying a hollow limb in a giant pine overlooking the lake.

Hirundo erythrogaster. Barn Swallow. "Breeds . . . the entire length of the state west of the Sierras". In noting exceptions the List gives Lake Tahoe and Eagle Lake as extremes from the northeast. We found Barn Swallows breeding sparingly throughout Modoc and Lassen counties, with particular records as follows: Long Valley, June 4, 1912; Goose Lake (Davis Creek) June 17, and Surprise Valley (Eagleville), June 29, 1912.

Vireo huttoni huttoni. Hutton Vireo. A more "eastward" record than any given by Grinnell is Palm Springs, January 25, 1913, a specimen taken by Allan Brooks.

Cinclus mexicanus unicolor. American Dipper. Grinnell omits all reference to the hibernal retreat of this species to lower levels. This phenomenon would not be noticeable in the southern ranges, but is undoubtedly as characteristic of the bird in northern California and the high Sierras as it is in Washington or British Columbia. "Also, perhaps casually, or at any rate not at present time, vicinity of Santa Barbara". Mr. Bowles has seen the bird in Mission Canyon, and I flushed one repeatedly in Tecolote Canyon, November 10, 1915. My impression is, however, that these are extreme examples of the hibernal retreat referred to, rather than of resident birds.

Oreoscoptes montanus. Sage Thrasher. On the 4th of April, 1914, a single individual of this species ventured near our camp and sang sweetly at "Point of Rocks", in extreme northwestern Kern County.

Catherpes mexicanus punctulatus. Auburn Canyon Wren. "Fairly common resident locally . . . San Diego northwestward to Mount Pinos". This wren is quite common in the Santa Ynez Range near Santa Barbara, and appears to be on the increase of late. "Sparingly in west-central district", with southernmost citation from Santa Cruz County. This bird occurs regularly also along the "innermost coast range"—shall we call it the Shandon Range?—which forms the eastern border of San Luis Obispo County. Record stations are: Shandon, S. L. O. Co., March 29, 1911; Palo Prieta (Valley), S. L. O. Co., April 8, 1911; Antelope Valley, extreme northwestern Kern County, April 10, 1912; Canaris Springs, Kern County, April 4 to 7, 1914; Kettleman Plains, western Kings County, April 7, 1911.

The most out of character occurrence of this bird in my experience was at Lathrop, on the edge of the great San Joaquin swamp, May 25, 1912. The wren examined the gables of a blacksmith's shop, flitted to a neighboring windmill, sang, and appeared thoroughly at home. "Casually to Santa Cruz Island". Heard on only one occasion, April 20, in the dropping song, by our island party of 1915.

Troglodytes aedon parkmani. Western House Wren. "Common summer visitant to Upper Sonoran and Transition . . . invades the higher mountains extensively during late summer". This doughty Troglodyte is also entitled to a place as a breeder in the Canadian zone. I found nests and took eggs (July 3 and 8, 1912) of this species in the Warner Mountains, at an altitude of over 7400 feet. Its nesting associates at this station numbered such indubitable borealities as Western Ruby-crowned Kinglet, Wright Flycatcher, and Red-breasted Nuthatch.

Penthestes gambeli baileyae. Bailey Chickadee. "Common resident . . . from Mount Pinos . . . southeastward". Mountain Chickadees sometimes appear on the Santa Ynez Range, back of Santa Barbara (January 6 and 16, and February 27, 1915); and I have had the birds described to me within the city limits.

Psaltriparus minimus californicus. California Bush-Tit. "Northeastward . . . to head of Pit River basin on the west side of the Warner Mountains". On July 1, 1912, we found this species on Raider Creek just above the Surprise Valley, on the lowermost eastern slopes of the Warner Range. The extension seems trivial save when it is real-

ized that *P. plumbeus* might possibly occur there, as it does a little farther east, in Nevada (Taylor's Birds, etc., of Northern Humboldt County, Nevada, p. 419).

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. A family group encountered July 3, 1912, at an altitude of 7500 feet on the east slope of the Warner Range, and the species repeatedly seen thereafter near Eagle Peak. Not previously recorded from these mountains.

Santa Barbara, California, December 8, 1915.

FROM FIELD AND STUDY

House Finch or Linnet?—*Carpodacus mexicanus frontalis* has long been known in the A. O. U. *Check-List* as the House Finch. It is generally known by that name over its whole vast range except in a portion of California. Yet it is rather persistently called Linnet (or, worse still, California Linnet) by a group of Californians of an ornithological turn of mind, who frequently succeed in getting one or the other of those terms into so excellent a magazine as THE CONDOR. Is it impertinent to ask why?

"Linnet" is certainly not distinctive. It means nothing. It is applied to different species in different parts of the world, and by the vast majority of ornithologists of the world would, if standing by itself without the technical name, be taken to mean a very different species which does not occur where the House Finch is found.

Surely no one can defend the term "California Linnet" as applied to this bird. The temporarily successful effort a few years ago to have the latter adopted in the *Check-List* savored of an attempt to boost California real estate by foisting upon this wide-spread species a geographic name representing only a short, narrow strip along the extreme edge of its range. Some of us who frequently visit that great state and view its wealth and natural resources, enjoying its surf-bathing, climate, scenery and other advantages, admire the loyalty and boosting spirit of its citizens, but feel that it is hardly necessary to thus misrepresent the range of a bird species in ornithological nomenclature, in order to sustain California's splendid material progress. Also we are constrained to believe that the few who are seeking to do so do not really represent the ornithologists of the state. I hope I may not be considered presumptuous in inviting the few seceders to move back into the United States and conform to the custom of the country, in the interests of nomenclatural uniformity.—JUNIOUS HENDERSON, *University of Colorado, Boulder, Colorado.*

Shearwaters on San Francisco Bay.—On the afternoon of September 8, 1915, while crossing the bay from San Francisco to Sausalito at 4:30 o'clock, a small movement of Shearwaters, presumably *Puffinus griseus*, was observed. The birds were working on an ebb tide from the upper bay toward the Golden Gate, their line of flight being between Alcatraz and Angel islands. All crossed the bow of the boat, but when about mid-way between Alcatraz and the Heads, seemingly whirled back towards the former. Similar but larger movements have been noted on several occasions during the last fifteen years.—JOHN W. MAILLIARD, *San Francisco, September 14, 1915.*

A Golden-crowned Sparrow Lost on Mount Shasta.—On August 22, 1915, I found a Golden-crowned Sparrow (*Zonotrichia coronata*) frozen in the snow at an altitude of 14,350 feet on Mount Shasta. The specimen was forwarded for verification of identity to the California Museum of Vertebrate Zoology, where it is preserved as an alcoholic (no. 25531 of the bird collection). Since the bird is apparently in nuptial plumage, it had probably met its fate some time during the preceding spring migration period.—W. J. CHAMBERLIN, *Weed, California.*

Late Nesting of the Arkansas Goldfinch.—On October 22, 1915, while pruning some apple trees near my house, I was surprised to find a Goldfinch (*Astragalinus psaltria hesperophilus*) sitting on three eggs in a nest about eight feet above the ground in one of the apple trees. The young hatched on the 24th of October. I looked at the nest on November 4 and they were still in the nest; but on the 8th they had left, probably taken by a cat, though they may have flown by that time.—J. S. APPLETON, *Simi, Ventura County, California.*

An Unusual Nest Addition.—A nest of Black-chinned Hummingbird (*Archilochus alexandri*) containing two eggs, apparently far advanced in incubation, was found on May 31, 1915, near Pasadena, and at that time there was nothing to distinguish it from any typical alexandri nest. It was built upon a slender branch of a sycamore and was more or less sheltered by an overhanging leaf. On June 11 the nest was again observed, in the meantime young birds having appeared, and it was noted that nest material had been added to the upper and outward part of the walls, extending upward about a half-inch. I had occasion to again visit the nest on June 18, and the tip of the overhanging leaf had been securely caught by spider webbing to the extended wall, thus forming a somewhat stationary canopy. As a protection from the sun the nest was but little better sheltered than before. Possibly the leaf drooped down to interfere with the feed-



Fig. 1. NEST OF BLACK-CHINNED HUMMINGBIRD, SHOWING ATTACHMENT OF A LEAF TO THE RIM OF THE NEST

ing of the young or to the displeasure of the parent birds for some other reason, and this means was sought for removing the trouble.—HAROLD M. HOLLAND, *Los Angeles, California*.

A Record of the Golden Plover in the State of Washington.—This interesting species (*Charadrius dominicus dominicus*) has never before, to my knowledge, been recorded as occurring in the state of Washington. Therefore it is with great pleasure that I report the capture of an adult female at Dungeness, Clallam County, Washington. This specimen was collected by Mr. F. P. McIntyre, of Tacoma, Wash., on November 14, 1915. He very kindly presented it to me, and the skin is now in my collection. Mr. McIntyre tells me that he saw about a dozen other plover that resembled this one, but that he shot no

more. It is possible that the other birds seen might also have been *C. dominicus*; but it must be stated that the Black-bellied Plover is a common migrant in Washington, and it seems equally possible that the others might have been *Squatarola squatarola*.

Since the above-mentioned specimen was obtained Mr. D. E. Brown, of Seattle, Washington, tells me that a Golden Plover was taken some time ago in the vicinity of that city, but I believe that it has never been put on record. Mr. Brown also tells me that a year or two ago he saw on the Tacoma Flats what he feels certain was a bird of this species, owing to the large amount of yellow on the upper parts. This was in the late spring and the bird appeared to be in full breeding plumage. It seems possible, therefore, that this plover is of more frequent occurrence in the state than has been supposed.—J. H. BOWLES, *Tacoma, Washington*.

A Note on the Food of the Northern Pileated Woodpecker.—The stomach contents of a specimen of the Northern Pileated Woodpecker (*Phloeotomus pileatus abieticola*) taken at Lakeport, Lake County, California, November 5, 1915, and sent to the University of California Museum of Vertebrate Zoology, was found to be of peculiar interest. The stomach contained more than fifty carpenter ants (*Camponotus herculeanus* subsp.) and 131 seeds of poison oak (*Rhus diversiloba*). As the seeds of poison oak are hard and without a noticeable covering of softer material it is difficult to understand what there is about them that is attractive to birds. Certain it is that the seeds are incapable of complete digestion by woodpeckers. In California poison oak is a favorite food of the Red-shafted Flicker also. Ants are commonly taken by the Flicker, California Woodpecker and by Sapsuckers.

The stomachs of two Pileated Woodpeckers taken in or near Yosemite National Park (orig. nos. 1545 and 7814, in Mus. Vert. Zool.) were filled with carpenter ants (*Camponotus herculeanus modoc* Wheeler), many of them winged. Each stomach contained more than a hundred of these ants. In addition one stomach contained a whole fruit of manzanita (*Arctostaphylos nevadensis* Gray) and the other, four large beetle larvae (*Cerambycidae*), unidentifiable as to genus or species, which had evidently been dug out of some dead tree, as the stomach contained slivers of dead wood.

The above evidence shows that the animal food of the Pileated Woodpecker in California is largely made up of carpenter ants (*Camponotus* sp.) and to a lesser extent of wood-boring larvae. Vegetable food in the shape of poison oak seeds and the fruit of manzanita is occasionally taken.—H. C. BRYANT, *Berkeley, California*.

Occurrence of Emperor Goose in Northern California.—On November 1, 1915, Mr. S. M. Gridley, of Gridley, California, brought me an Emperor Goose for mounting. The bird was in full adult plumage, and in good physical condition. Sex identification was impossible on account of the damaged state of the internal organs. I at once appreciated the rarity of the goose and endeavored to obtain possession of the specimen, but the owner declined to part with it.

The gentleman reported that for a week prior to being killed, this goose had frequented, in the company of a flock of Cackling Geese, the territory adjacent to the tules west of the town. The bird was so tame as to lead to the supposition that it was a cripple, and only upon being closely approached did it fly.

I was further told that a similar goose had been shot last year in the same locality.—CARL S. MULLER, *Marysville, California*.

Townsend Solitaire in the San Jacinto Mountains.—In the field work conducted in the San Jacinto Mountains in 1908 by the Museum of Vertebrate Zoology, and subsequently reported upon by Grinnell and Swarth (Univ. Calif. Publ. Zool., vol. 10, 1913, pp. 197-406), the Townsend Solitaire (*Myadestes townsendi*) was not met with at any point. From the number of collectors in our party, enabling us to cover a wide extent of ground, and from the length of time we spent in the mountains, we felt justified in the conclusion that our failure to encounter this species meant that it did not breed in this southern range. It was, therefore, with the greatest interest that I recently learned from Mr. O. W. Howard that this was a mistaken idea.

Messrs. O. W. Howard and H. J. Leland spent a few days of this year (1915) in Strawberry Valley and vicinity, where they discovered two nests of the Solitaire. The first was far up a narrow canyon heading on Tahquitz Peak and opening out in the

upper part of Strawberry Valley, the nest being at an altitude of approximately 7500 feet. It was discovered on July 4, and contained four small young. The parent bird was flushed from the nest. The second discovery, on July 5, was of a deserted nest, found in Dark Canyon, on the Banning road, northwest of Strawberry Valley.

On September 14, 1914, the present writer saw two Solitaires on the slopes of San Jacinto Peak, between Round Valley and the summit, and in September, 1915, Mr. L. E. Wyman tells me he collected three of the birds in Tahquitz Valley, and saw several more. These, of course, might all have been migrating individuals.

The breeding record of Messrs. Howard and Lelande is of especial interest as establishing the presence of the species at the extreme southern limit of the Boreal zone in California. Previous to this the Townsend Solitaire was known to breed in southern California only in the San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., vol. 5, 1908, p. 128).—H. S. SWARTH, *Museum of History, Science and Art, Los Angeles, California*.

Auburn Canyon Wren, a Preferable Name for *Catherpes mexicanus punctulatus*.—

We have no recourse against misnomers in scientific nomenclature provided they establish priority; but it is silly to perpetuate in common speech the trivialities, or whimsicalities, or downright misapprehensions, of original describers. I have no quarrel with Mr. Ridgway for having named a new race of *Catherpes*, *punctulatus*. He had to name it something and he may have been struck at the time with an aspect of his new bird which later experience proved not to be distinctive. At any rate in his latest description (Birds of North & Middle America, Part III, p. 659), Mr. Ridgway does not even refer to this feature of punctateness. He merely says of *C. m. punctulatus*: "Similar in small size to *C. m. conspersus* but decidedly darker".

This darker coloration, then, is the point to emphasize, and the point which should have been brought out in nomenclature (doubtless would have been if *brunneicapillus* had been accurately descriptive or had not already been worn to a frazzle in the service of the Wrens), instead of a purely hypothetical dottedness. Now, every one who knows this jolly mountaineer of California, knows that his coat is of a rich auburn hue. To call him "Dotted" by preëminence, is to imply that his conspecific associates are *not* dotted, or not as conspicuously dotted as he, which is not at all the case. To cling to such a misconception or false emphasis merely for custom's sake is to repeat the offense and to be unscientific. I propose, then, as a designation both suitable and distinctive for the California bird the name *Auburn Canyon Wren*.

This same method of criticism may be applied to several other cases, fortunately only a residual few among Western bird-names. The name "Long-tailed Chat" for *Icteria virens longicauda* is technically correct; the bird has a longer tail than its eastern relative, *a third of an inch longer!* but no one would ever have seized upon such a trivial mark for a name, save in ignorance and sheer despair. Besides, the western bird has half a dozen other distinctive characters just as palpable. And there are only two Chats. For pity's sake and for the sake of our own good sense, let us cease to brandish this extra third of an inch on a bird's tail. Call it the Western Chat.

As another instance of the poverty of attention or laziness of invention, behold our literal translation of *Rallus levipes*, the Light-footed Rail, of course! And because of this flippant character (whose claims it would take a two-pound can of printers' ink to successfully define anyway), we are suffered to forget that the southern bird is a *Clapper* Rail. But "Light-footed Rail" does sound well. It flicks the imagination and is undeniably romantic. It almost picks the pocket of my prejudice. Light-fingered Rail would do it quite. Moreover, the name as it stands has a market value. Why, the skin of a "Light-footed Rail" sounds twice as expensive as would the skin of a Southwestern Clapper Rail with its implied taint of subspecificness. I have neither skins nor eggs myself, but I withdraw my objection in this case in favor of certain worthy friends, worthy and needy.

Remains only one sticker in the writer's dyspeptic crop, the "Ashy" Petrel, *Oceanodroma homochroa*. The bird simply *isn't* ashy. It is plumbeous black. The man of only ordinary intelligence picking up a waif Petrel on the strand out of range, has to consult his books to know whether his find is really an "Ashy" Petrel, or a Black Petrel (*O. melanota*). No amount of nomenclatorial abuse heaped upon this bird will ever make its plumage recognizably cinereous. Why not call it, then, after the worthy man who discovered it, "Coues" Petrel?—WILLIAM LEON DAWSON, *Santa Barbara, California*.

Notes from the San Bernardino Mountains, California.—From June 21 to July 1, 1915, I spent in field work at Big Bear Valley and Bluff Lake in the San Bernardino Mountains. I was also in the same locality from September 16 to 20, 1915. The following are some of my notes that may be of interest.

Dafila acuta. Pintail, or Sprig. This duck was abundant from September 16 to 20. There were at least a thousand, and probably many more, on Baldwin Lake, and several hundred at the east end of Bear Lake. The greater majority were either females or birds of the year, very few adult males being seen.

Ortyx picta plumifera. Plumed Quail. I saw a pair of these birds on June 27 in the buckthorn along the lake shore near the I. S. Ranch. Their actions showed that they had a family of young. These are the only ones that I have ever seen in Bear Valley during several collecting trips there.

Accipiter velox. Sharp-shinned Hawk. Several were seen in Bear Valley from September 16 to 20. They were apparently absent during June.

Falco mexicanus. Prairie Falcon. One flew over me, near enough for certain identification, along the lake shore near the east end of Bear Lake on September 17.

Bubo virginianus pacificus. Pacific Horned Owl. Heard nearly every night along the lake shore both in June and September. Specimens were very hard to obtain as the birds were exceedingly wary. No adults were taken, but on June 24 I shot a nearly full-fledged young female from a pine tree.

Chordeiles virginianus hesperis. Pacific Nighthawk. Pacific Nighthawks were very common at both Bear Lake and Bluff Lake during my stay in June. They were most often seen in the evenings when they were flying high overhead apparently catching insects. At this time their shrill notes, and loud "whoof", made at the end of a dart downward through the air, were often heard. Several times late in the afternoon I heard their notes high overhead, most often near Bluff Lake, so that at times these birds must fly about during the daytime. From September 16 to 20 I did not see or hear one of these birds.

Cyanocitta stelleri frontalis. Blue-fronted Jay. A nest was discovered June 21 near Bear Lake, placed fifteen feet up on a large branch of a silver fir. The nest contained five very small young at this time. This pair of birds seemed to take particular delight in attempting to approach a Western Robin's nest, that was in a small pine tree near our camp and not far from the Jay's nest. Apparently they were never successful, as the Robins were always on their guard and would drive them away with many angry notes and much fluttering of wings.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. I shot an adult male along the east shore of Baldwin Lake on July 1. This was the only one met with and I believe is the first recorded from the valley.

Sturnella neglecta. Western Meadowlark. One pair was seen on a meadow near the I. S. Ranch, and several others were noted near Knight's Camp on June 30.

Carpodacus cassinii. Cassin Purple Finch. About Bear Lake Cassin Finches were very common feeding on small weed seeds in the meadows near the lake shore. Out of a dozen specimens, nearly all apparently breeding birds, there was only one female.

Melospiza lincolni lincolni. Lincoln Sparrow. On June 21 in a small meadow near Bluff Lake I found a nest containing five eggs of this bird, incubation just started. The nest was placed on the ground at the base of a small bunch of hellebore, and was composed mostly of grass, with a little hair and one feather for a lining. I spent considerable time in further search but did not find any more nests although there were several of the sparrows apparently nesting there. On June 26 in the same locality I shot an immature male just able to fly, but did not discover any more nests. The five eggs taken strongly resemble Song Sparrow eggs; they are, however, a very little smaller, more coarsely blotched, and with a lighter blue ground color.

Myadestes townsendi. Townsend Solitaire. Only one of these birds was seen. On June 23 in a little canyon near Bluff Lake I shot an adult male, a breeding bird. The bird had only one long tail feather, but a new tail was about a third developed.

Hylocichla guttata sequoiensis. Sierra Hermit Thrush. One, a breeding female, was taken and another seen on June 26 along a little stream near Bluff Lake.—WRIGHT M. PIERCE, Claremont, California.

White-winged Scoter in Klamath County, Oregon.—On November 11, 1915, a duck hunter who had been hunting down the river below town brought in a White-winged Scoter (*Oidemia deglandi*) which I skinned and saved. I doubt very much if this bird has ever been recorded from this locality before. My brother claims to have killed one several years ago while hunting ducks down the river. These are the only ones I have ever heard of being taken in this locality.—HARRY TELFORD, *Klamath Falls, Oregon*.

Marbled Godwit in Colorado.—There are not many definite records of *Limosa fedoa* in Colorado. A specimen in the State University Museum, taken northeast of Boulder by James Cowie, September 18, 1915, adds this species to the Boulder County list.—JUNIOUS HENDERSON, *University of Colorado, Boulder, Colorado*.

The Pigeon Guillemot Nesting in San Francisco.—Having read with interest Mr. Joseph Mailliard's record of the Scaup Duck breeding within the confines of San Francisco (CONDOR, vol. XVII, p. 235) and which, by the way, I should like to confirm, having observed, in early July of 1913, a female *Aythya affinis*, with three young, swimming about Stowe Lake, the following may also be worthy of note.

During the summer of 1911, my attention was called by a friend, to a species of "duck" nesting in an inaccessible cleft on the high, rocky bluffs that border the ocean at the entrance to the Golden Gate. Investigation disclosed the fact that a pair of Pigeon Guillemots (*Cepphus columba*), had tenanted the cavity, and were, at that date, the first of July, busily engaged in carrying food to their young.

About June 1 of the following year, 1912, Mr. H. W. Carriger and the writer, having noted several birds in the vicinity, proceeded with aid of a rope to examine the nesting locality of the previous year. The cranny, a very deep and well adapted site, proved, however, to be unoccupied.

Some five days later, on June 5, the writer returned alone, and in climbing around a precipitous promontory, flushed a Guillemot from a cave near the water's edge. The nest contained a set of two eggs, almost fresh, which are now in my collection. Further search disclosed the occupancy of another hole above an unscalable ledge, and still another pair apparently breeding on a small detached island, the last, however, being unestablished.

Since then, close watch has been kept, but for some reason, probably the disturbing of their secluded homes and the collecting of two specimens, the birds have entirely absented themselves from this locality, and during the past three years, have never again been seen.—GEORGE W. SCHUSSLER, *San Francisco, California*.

The Coloration of Eggs.—Several inquiries have appeared lately in the various ornithological journals as to the time and manner in which the pigments are deposited upon the egg-shell. What is perhaps the most thorough treatise upon this subject will be found in Chapter XII of "A History of Birds", by W. P. Pycraft. The text is much too long to be quoted here in its entirety, but perhaps the following extract may be of value to those who have not access to the above-named volume. Mr. Pycraft says:

"We may assume that . . . this pigment is deposited by the walls of the oviduct, and it would seem that in many cases this deposition takes place in two different regions of the duct, first on the formation of the earlier layers of the shell, where little more than a slight staining is effected, and later when the shell is nearly complete; in most cases there is no coloration until the egg has passed some way down the oviduct. It would then appear that the ground colour is first deposited, and after this the peculiar markings of the particular egg. When these are formed while the egg is at rest a sharply defined spot is the result; but it commonly happens that the deposit of pigment takes place while the egg is in motion, smears and blotches being the result; and it would further appear that the egg in its passage rotates, inasmuch as these streaks and lines show a decided spiral arrangement. These various evidences of the process of coloration can be well seen in eggs of many birds of prey, as well as those of . . . the Guillemots, for example."—D. I. SHEPARDSON, *Los Angeles, California*.

A Record of the Forbush Sparrow in the State of Washington.—So far as I have been able to ascertain there is no definite record of this form (*Melospiza lincolni striata*) as occurring in Washington. It is of interest, therefore, to state that I had the good fortune to collect a typical female of this subspecies near Tacoma on November 11, 1915. The bird was identified for me through the kindness of Mr. Joseph Grinnell. I feel positive that there was at least one other in the same locality, a large field grown over with thistles and other weeds, but they were so shy that it was only by a lucky chance that I secured the one here recorded.—J. HOOPER BOWLES, *Tacoma, Washington*.

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EDITORIAL NOTES AND NEWS

Contributors to THE CONDOR will doubtless wish to avail themselves of any opportunity of improving their literary out-put. To this end we would recommend securing and *studying* a pamphlet recently issued from the University of California Press under the experienced authorship of the Manager, Mr. Albert H. Allen. The title, "Suggestions on the preparation of manuscript", indicates the scope. As long as surplus copies are in stock each applicant may secure one by sending a two-cent stamp with his request to the University of California Press, Berkeley.

During a recent trip through southern California, the Editor visited the home of Mr. W. Lee Chambers, one of the Business Managers of the Cooper Club. Of great interest there, was the admirable system with which the Club's property and financial affairs are handled. The greatest of scrupulosity is observed in accounting for every item. Back numbers of CONDORS and AVIFAUNAS, amounting to *tons*, are housed in an isolated fire-proof building, the re-

serve supply carefully wrapped so as to escape injury from dust and dampness, and everything card-indexed to the very last copy. An exact accounting of Club funds, as derived from dues and subscriptions, can be ascertained from the card files any day in the year. The attention of both Mr. Law and Mr. Chambers is now concentrated upon ways and means to expand the publication-capacity of the Club, in other words, upon enlargement of THE CONDOR and more frequent additions to the AVIFAUNA series.

During the greater part of the past year the California Museum of Vertebrate Zoology has been conducting field work upon the birds, mammals, reptiles and amphibians of the Yosemite region of the Sierra Nevada. The objects of this work have been twofold: First, to make a detailed and comparative faunal study along a definite cross-section of the central Sierra Nevada from the San Joaquin Valley base to Mono Lake; and second, to provide material to be used as basis of a semi-popular account of the vertebrate natural history of Yosemite National Park.

Under the first head, maps, photographs and large collections of specimens have been assembled, from which to determine the nature and extent of the life zones of the region, and to define the systematic status and inter-relationships of the various constituent vertebrate species.

Under the second head, much information has been gathered concerning the life-histories of the conspicuous species, particularly birds and mammals, and the relations of these to Park conditions from the standpoint of the nature-loving visitor. The principle is evident, that the animal life of any Federal Reservation is an important asset, to be considered as such along with the forests, lakes, water-falls and sculptured cliffs. The birds and mammals should be conserved in maximum numbers, as valuable elements going to make up the sum-total of attractiveness.

The Yosemite National Park is visited by thousands of people each year, a certain portion of whom would find, in an appropriately compiled account of its natural history, a guide and incentive to pleasurable observation of its animal life. An increasing number of people are turning their attention at vacation time toward out-of-door bird-study. In fact there is a distinct tendency to be observed among educated classes, to include a first-hand knowledge of the higher vertebrates among those accomplishments the possession of which denotes intellectual refinement.

To meet and promote the above tendency, and to emphasize an important National Park asset, were the considerations which prompted the undertaking here outlined. The Yosemite Natural History Survey, together with compilation of results, is being

conjointly carried on by Joseph Grinnell, Walter P. Taylor, and Tracy I. Storer, staff-members of the Museum of Vertebrate Zoology, assisted by several graduate students from the natural science departments of the University of California and of Stanford University. These assistants included Charles L. Camp, Charles D. Holliger and Gordon F. Ferris. In addition, Mr. Joseph Dixon, who has recently joined the staff of the Museum of Vertebrate Zoology, spent some weeks in the field during the late fall. The expenses of the work are being defrayed in major part from private sources, most notably through special gift from Miss Annie M. Alexander. This benefactor is thus to be credited with actuating much of the natural history fieldwork now going on in California.

The Editor was recently privileged to look over the private collections of Mr. Donald R. Dickey of Pasadena and was astonished at their extent and especially the great care displayed in their preparation and housing. These collections consisted not only of study-skins of birds and mammals, but also of large series of high-class photographs, betokening great patience and ingenuity in field-work. Truly excellent *autochrome* pictures of *living* birds marked the latest advance in the art of photography. Numbers of reels of movies, taken of both birds and mammals, showed the highest degree of perfection in this difficult field. Yet, withal, Mr. Dickey's modesty has thus far retarded publication of most of his work. We have reason to believe, however, that before long through certain channels bird students will come to know of Mr. Dickey's work to their distinct benefit and enjoyment.

In a recent paper published in the *Ottawa Naturalist* (vol. XXIX, 1915, pp. 14-18, 21-28), Mr. P. A. Taverner sets forth some very sound principles of ornithological practice. His title, "Suggestions for ornithological work in Canada", would appear to indicate restriction in scope; but, in fact, the ideas are in large measure applicable in any country. Two or three paragraphs may be quoted here as samples of the sane things said.

"There is also a sentiment against the scientist collecting 'rare birds' on the supposition that if these were allowed to breed they would become common. There are practically no birds, but game, raptorial and plumage forms, that suffer systematic persecution. The number of small or rare birds that are killed by human agencies, except for profit or food, is on the average negligible. Are there a dozen people in Canada, seeking or hunting for Cory's Least Bittern? How many would know one if they saw it? The species has had hundreds of generations in which to become common; if they are rare now it is due to the action of still operating natural causes. The rari-

ty of a creature not especially or generally hunted for profit is an indication that it is not adapted to conditions and is nearing extinction through natural causes. Rarity obviously just precedes extinction."

"It must be borne in mind that our bird population is limited by natural conditions. In most cases this limit was reached long ago, and no more birds can inhabit North America than can find support during the season of least food supply. In a normal or stationary population, the death rate must equal the birth rate or else the population ceases to be stationary. The breeding season increases the population enormously and one way or another this increase must be, and is, reduced to the smaller supporting power of the land through winter.

"It is evident that this allows of a considerable margin of reduction and shows that even quite considerable numbers can be destroyed without interfering with the ultimate numbers of the population and that the comparatively few individuals taken by collectors cannot have an appreciable effect upon their number."

PUBLICATIONS REVIEWED

WILD BIRD GUESTS | how to entertain them | with chapters on the destruction of birds | their economic and aesthetic values | suggestions for dealing with their | enemies, and on the organiza- | tion and management of | bird clubs | By ERNEST HAROLD BAYNES | with 50 photogravure illustrations | from photographs | New York | E. P. Dutton & Company | 1915 | . Pp. xviii+326, unnumbered plates as above. (\$2.00.)

The author and publishers are to be congratulated on the production of this remarkable book. The reader at once receives an impression of high quality, to which a number of factors are contributory. Among these is the artistic make-up of the book. The typography could hardly be improved upon, and the photogravures, many of which are of living birds or mammals, are excellent. The personality of the author himself is without doubt a large element of attraction. Especially worthy of remark are his modesty, and his cordial appreciation of the work of others in behalf of conservation.

Indicative of his quality of appreciation of the contributions of other workers are the following quotations (pp. 310, 311): "The author . . . proffers his thanks . . . to none more gratefully than to those scientific men in Washington and elsewhere, upon whose patient, accurate, but often unappreciated work, some of the strongest pleas for bird conservation are based." "When an unbiased history of American wild bird conservation is written, there will be few names which stand out with greater prominence than that of Edward Howe Forbush, who never pauses in his work to tell the world that it is he who is doing it."

In their own neighborhood Mr. and Mrs. Baynes have had wonderful success in making the intimate personal acquaintance of many birds. A very full discussion of such problems as those concerning methods of attracting birds, feeding birds in winter, devices which have been found useful, nest boxes, and the best shrubs and plants for attracting birds, is one of the chief contributions of the book.

The much argued questions as to the relations of the farmer, the sportsman, the foreigner, and the scientific collector to the preservation of birds are discussed in a refreshingly impersonal way. Mr. Baynes has avoided sweeping statements, and it must be admitted that his words have a correspondingly convincing quality.

Worthy of note is his attitude toward the predatory fur-bearing mammals and other bird enemies, so often condemned unconditionally by bird enthusiasts. Evidence for as well as against them is carefully entered, and in concluding the chapter treating of destruction of birds by natural enemies, he says (p. 37): "Yet it is a fact that all the storms that sweep the earth and all the natural enemies, including savage people, would seldom make any lasting impression on the normal bird population, if it were not for civilized man and his works." He makes clear the fact that the market demand for bird plumage or for the flesh of wild birds has been of foremost importance as a factor in the decrease of many species and the extermination of others.

It is of decided interest that the author, although not a collector himself, has not allowed his devotion to the birds to blind him to the relation of the scientist to conservation. On page 267 he says: "As for scientific collectors, the writer believes that they should be allowed to go about their work unhampered by petty restrictions. Compared with other gunners they shoot few birds and these are generally made good use of. The complaint that scientific men do not do their share in the work of wild life conservation, is generally unfair. It is usually the cry of some conservationist who wishes he were scientific but is not, who wishes to attract attention to his own work by belittling that of others, or who does not appreciate the fact that the work he himself is doing is based largely on the work of the scientist."

As a step toward the solution of the cat problem, admittedly one of the most difficult before bird lovers, a tax of one dollar on each male cat and five dollars on each female cat is recommended.

The English Sparrow, or European Sparrow as Mr. Baynes calls it, apparently has no terrors for the author. The birds have been banished completely from his home town, Meriden, New Hampshire. Trapping is asserted to be the safest method of elimination, poisoning the most effective. As to the possibility of eradicating the English Sparrow he says (pp. 245, 246): "Almost any town or city can be cleared of European Sparrows and kept clear of them, if just a few men of resource and resolution will undertake the work. In almost any town there are a certain number of men who have made a great success in business, and I know and they know that if the sparrows had stood between any one of them and the success he has made, there would not be a single sparrow in that town."

Mr. Baynes gives ample space and adequate treatment to the economic argument for bird protection, but wisely realizes that without feelings and passion as well as economics and intellect behind it the movement for conservation will not get as far as it ought to. The following is from his discussion of the aesthetic and moral reasons for protecting the birds (p. 116): "No woods are dreary if the jays or crows are calling; no field but is full of joy if the bobolinks are sprinkling it with their song; and he is not quite human whose heart does not beat faster when at night and far above him he hears the cry of the wild gander as he leads his flying squadrons northward, homeward, through the pathways of the skies."

The note of Mr. Bayne's argument, throughout, is an optimistic, a constructive one. His is not a code of *don't's*, but rather a compellingly persuasive program of *do's*. Realizing the fundamental importance in our complicated civilization of organization as an aid to individual effort he places much emphasis upon the desirability of the formation of bird clubs.

After reading the book one is not surprised to learn that a new edition has had to be prepared already.—WALTER P. TAYLOR.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

OCTOBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, California, Thursday evening, October 28, 1915, at 8 P. M. In absence of both the President and Vice-President, Dr. H. C. Bryant assumed

the chair and appointed Mr. H. W. Carriger, Secretary pro tem. The following members were in attendance: Mesdames Allen, Bryant, Purington, and Schlisinger, Miss Culver, and Messrs. Bolander, Bryant, Carpenter, Carriger, Kendall, and Noack. Among the visitors were Mr. and Mrs. H. L. Bryant, Mrs. Noack, Miss Handyside, Mrs. Klugel, and Messrs. Harris, Heger, Purington, Wiley, and Wright.

The minutes of the Northern Division September meeting were read and approved, and the minutes of the Southern Division and of the Inter-Mountain Chapter were also read. The following were elected to membership: C. A. Purington, 2223½ Chapel St., Berkeley, Lydia Atterbury, 2620 LeConte Ave., Berkeley, and Cornelia C. Pringle, Cupertino. Applications for membership were received from H. T. Liliencrantz, Hollister, proposed by Margaret W. Wythe; Mrs. Edw. A. Klugel, 2623 LeConte Ave., Berkeley, and Miss Francis MacCulloch, 2213 Union St., Berkeley, both proposed by Geo. E. Stone; and Leo Wiley, Palo Verde, proposed by J. Grinnell.

The Chairman called attention to the new Avifauna, "A distributional list of the birds of California", by Dr. Grinnell. This was pointed out as the best reference work on California birds now obtainable, and as perhaps the most accurate state list ever issued. Attention was also called to the zoological survey of the Yosemite region now being made by the Museum of Vertebrate Zoology.

In introducing the speaker of the evening, Mr. H. R. Noack, Dr. Bryant pointed out that although the breeding of wild birds in captivity is being widely carried on in Great Britain and that numerous periodicals dealing with the results obtained are published there, little is done in the United States along these lines. Much can be learned as to the habits of birds by keeping them in captivity. The aviary should be encouraged rather than discouraged.

Mr. Noack, who has for a number of years been maintaining an aviary of foreign birds, then gave a talk on "Breeding habits of foreign doves and finches in captivity". Particular attention was called to the successful breeding of Nicobar pigeons in his aviary. About fifteen different kinds of doves and pigeons have been successfully bred by him, and also a large number of interesting foreign finches. Mr. Noack illustrated his talk by sets of eggs of the orange bishop weaver and blood-billed weaver, and also by a nest of the former. A general discussion followed. Adjourned.—H. W. CARRIGER, *Secretary pro tem.*

NOVEMBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, November 18, 1915, at 8 P. M. President Joseph Mailhard was in the chair with the following members present: Mesdames Allen and

Purington, Miss Culver, and Messrs. Bolander, Bryant, Carriger, Evermann, Hubbs, Lastreto, Littlejohn, Noack, Reynolds, Squires and Taylor. Among the visitors present were Mesdames Grant and Taylor and Miss Newlon. In the absence of the Secretary, H. C. Bryant was appointed secretary pro tem.

After the reading of the minutes of the Northern Division October meeting the following business was transacted: Mr. Henry W. Henshaw, Chief of the United States Bureau of Biological Survey, was unanimously elected to honorary membership in the Club. Mrs. E. A. Klugel, Francis MacCulloch, H. T. Liliencrantz, and Leo Wiley were elected to active membership. The following applications for membership were presented: H. W. Daniels, Claremont, Mrs. Sophie E. Gay, Sacramento, and Mrs. Adele Lewis Grant, Columbia, all from California, proposed by H. C. Bryant. The President then called attention to the recently published Avifauna No. 11, Dr. Grinnell's "Distributional List of California Birds" and explained why this and other avifaunas cannot be distributed free to members.

The speaker of the evening, Mr. Chase Littlejohn of Redwood City, was introduced as one of the oldest collectors in the State, having been active along this line for forty-six years. Mr. Littlejohn's subject was: "Some unusual records for San Mateo County, California". Among the unusual takes mentioned were the following: Ashy Petrel, Least Bittern, Snowy Egret, Barrow Golden-eye (termed by him the rarest duck in California), American Scoter, Pectoral Sandpiper, Saw-whet Owl, Boreal Flicker, White-throated Sparrow and Forbush Sparrow. Species which have totally disappeared from the county are: California Brown Pelican, European Widgeon, White-fronted, Hutchins and Cackling Geese, Little Brown and Sandhill Cranes, Painted Quail (not uncommon in 1865), California Condor, Yellow-billed Magpie, and Western Raven. Other species once fairly common but now practically extinct are: Wood Duck, Whistling Swan, Avocet, Long-billed Curlew, Ferruginous Rough-leg, and Southern Bald Eagle. An interesting discussion followed. Adjourned.—H. C. BRYANT, *Secretary pro tem.*

SOUTHERN DIVISION

OCTOBER.—The regular meeting was held at the Museum of History, Science and Art, Los Angeles, Thursday evening, October 28. President Law was in the chair and the following members in attendance: Mrs. Law, and Messrs. Brown, Benton, Chambers, Colburn, Cookman, Howell, Holland, Layne, Miller, Nelson, Pierce, Rich, Robertson, Swarth, White and Wyman. Visitors present were Mr. and Mrs. L. M. Hickok, Mrs. Browne, and Mr. W. A. Browne.

The minutes of the September meeting were read and approved, followed by the

September minutes of the Northern Division, and the September and October minutes of the Inter-Mountain Chapter. New names were presented as follows: Eugene F. Clark, Los Angeles, by A. E. Colburn; Mrs. J. S. Locke, Whittier, and Kenneth Price, Whittier, by A. Cookman; H. E. Cox, Redondo, by W. Lee Chambers; Lilian Zech, Long Beach, and Myra Drachman, Long Beach, by C. B. Linton.

The unexpected presence of Mr. E. W. Nelson gave the Club an opportunity of hearing in some detail of the present status and probable workings of the "Migratory Bird Law". Mr. Nelson spoke at some length on this subject, to an intensely interested audience and one greatly appreciative of the occasion. Many questions were asked, and much informal discussion followed. Adjourned.—H. S. SWARTH, *Secretary*.

NOVEMBER.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Friday evening, November 26, with President Law in the chair, and thirty-three members and visitors in attendance. The minutes of the October meeting were read and approved. On motion the reading of the last minutes of the Northern Division, and of the Inter-Mountain Chapter, was dispensed with. New members were elected as follows: Eugene F. Clarke, H. E. Cox, Lilian Zech, Myra Drachman, Mrs. J. S. Locke, and Kenneth Price. The following new names were proposed: Henry E. Parmenter, Boston, Massachusetts, by W. Lee Chambers; Dr. C. G. Wiggins, Colton, by J. Bagley; Byron Cummings, Tucson, Arizona, by Mrs. J. W. Wheeler; Professor Samuel Rittenhouse, Los Angeles, by A. Cookman; Miss Faith Swift, Los Angeles, by Dr. L. H. Miller; W. A. Brouse, Los Angeles, and A. B. Dickinson, Los Angeles, by H. S. Swarth; Adele Lewis Grant, Columbia, California, Mrs. Sophie E. Gay, Sacramento, and Leo Wiley, Palo Verde, by H. C. Bryant.

Routine business disposed of, the remainder of the evening was devoted to an exhibition of lantern slides by Mr. William R. Flint, of Pasadena. Much of the subject matter was of eastern species, but there were many pictures of local birds also, of special interest and excellence. The Club is indebted to Mr. Flint for a most enjoyable evening. Adjourned.—H. S. SWARTH, *Secretary*.

DECEMBER.—The regular meeting of the Southern Division was held at the Museum of History, Science and Art, Thursday evening, December 30, with thirty members and visitors in attendance. In the absence of president and vice-president, Dr. L. H. Miller acted as chairman. The November minutes were read and approved, followed by the reading of the Northern Division minutes for December. New members were elected as follows: Leo Wiley, Mrs. Sophie E. Gay, Adele Lewis Grant, A. B. Dickinson, W. A. Brouse, Miss Faith Swift, Profes-

sor Samuel Rittenhouse, Henry E. Parmenter, Dr. C. G. Wiggins, and Byron Cummings. The following new names were presented: S. Harrison Eaton, North Bend, Ohio, George L. Fordyce, Youngstown, Ohio, H. H. Cleaves, New Brighton, New York, and Norman de Witt Betts, Madison, Wisconsin, all proposed by W. Lee Chambers; and A. H. Vilas, Santa Barbara, and Thomas Stevenson Bradlee, Boston, Massachusetts, presented by W. Leon Dawson.

The secretary read a letter, forwarded from the Northern Division, received from Mr. H. W. Henshaw in acknowledgment of his election to honorary membership in the club. It being in order to nominate officers for 1916, this business was then taken up. After some discussion the following nominations were made: President, Dr. L. H. Miller, on motion by Mr. Law, transmitted through H. S. Swarth; Vice-President, J. Eugene Law, on motion of W. Lee Chambers; Secretary, L. E. Wyman, on motion by Dr. Miller.

Business disposed of, the members settled down to enjoy a talk by Dr. Grinnell treating of the birds of the Yosemite region. The slides exhibited were many of them of a novel type, prepared for a particular purpose which was explained in some detail. Besides having the pleasure of listening to an entertaining general account of field work and observations in an especially attractive part of California, the members were privileged to hear announcement at this time of certain important discoveries and conclusions that will be published later on. Adjourned.—H. S. SWARTH, *Secretary*.

INTER-MOUNTAIN CHAPTER

NOVEMBER.—The Inter-Mountain Chapter of the Cooper Ornithological Club, met at Salt Lake City, Utah, November 9, 1915, in the office of Dr. D. Moore Lindsay, Boston Building. Meeting called to order at 8:30 p. m., President Lindsay in the chair, and the following members present: C. Barnes, J. Sugden, J. Mullen, Mrs. J. Mullen, F. Chambers, D. Moore Lindsay, A. O. Treganza, Mrs. A. O. Treganza.

Minutes of the October meeting read and approved.

The business of the meeting consisted in the election of officers for the ensuing year. Those elected were: Fred W. Chambers, President; J. A. Mullen, Vice-president; Mrs. A. O. Treganza, Secretary and Treasurer; C. Barnes, A. O. Treganza, Editing Committee; D. Moore Lindsay, J. Sugden, Program Committee; J. H. Paul, Wm. Wrathall, Investigation and Publicity.

A very interesting paper, "A Trip to Hat and Egg Islands of Great Salt Lake," by Mr. R. H. Palmer of Pocatello, Idaho, was read before the Club by Mrs. A. O. Treganza. Mr. Fred Chambers gave a most interesting short talk on successful trout fishing. Meeting adjourned at 10:30 p. m.—MRS. A. O. TREGANZA, *Secretary*.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge.

Notices of over ten lines will be charged for at the rate of ten cents per line. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

FOR SALE.—Ridgway's "Birds of North and Middle America"; 6 vols., wrappers, good condition; for \$20.00 net.—B. F. CASE, *Tolland, Connecticut*.

WANTED.—Good photos of any and all birds found in California, their nests, eggs, and nesting sites. Will pay cash or give good exchange in bird skins.—EDWARD WALL, *San Bernardino, California*.

WANTED.—Bird skins from the Western U. S. in exchange for Eastern skins. Kindly send list of duplicates and you will receive my list by return mail.—J. A. WEBER, *Box 327, Palisades Park, New Jersey*.

WANTED.—American Museum Journal, of New York: vol. V, nos. 2 and 3; vol. VI, no. 1; vol. VII, no. 3; vol. VIII, nos. 8 and index; vol. X, nos. 6 and 7; vol. XI, no. 2; vol. XII, no. 1. Guide Leaflets to same: nos. 9, 17, 18, 21, 23, 25, 27, 30. Zoological Soc. Bulletins, New York: nos. 1, 6, 8, 35, 43, 46.—CHAS. O. TROWBRIDGE, *Framingham Center, Massachusetts*.

WANTED.—Copies of any of the following publications. Nidologist, vol. 1, no. 2,

Oct., 1893; Osprey, N. S., 1902, March, April and July; Oologist, May and December, 1897, April and September, 1899; Wilson Bull., no. 4, 1894.—B. H. SWALES, *Grosse Isle, Mich.*

WANTED.—Nidologist, vol. I, nos. 1, 2, 5, 8; vol. II, 11; Osprey, vol. III, 7.—O. WIDMANN, *5105 Von Versen Ave., St. Louis, Mo.*

WANTED.—Loomis's "California Water Birds" number V; "The Blue Bird," vol. 6, nos. 1 and 2, published at Cincinnati, Ohio, by Dr. Eugene Swope; Bulletin of the Cooper Ornithological Club, vol. I, any odd nos.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

BOOKS WANTED.—Loomis' "California Water Birds," part v. Will pay any reasonable price for a copy of this.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

I WANT one copy each of "The Blue Bird", vol. 6, nos. 1 and 2, published at Cincinnati, Ohio; edited by Dr. Eugene Swope.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

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THE
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A Magazine of Western
Ornithology



Volume XVIII

March-April, 1916

Number 2



COOPER ORNITHOLOGICAL CLUB

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MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month; or on the Tuesday evening preceding, when the last Thursday falls on a holiday. Take south-bound car from town; on Spring Street, the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

NORTHERN DIVISION: At the Museum of Vertebrate Zoology, University of California, Berkeley. Time of meeting, 8 P. M., the third Thursday of every month. Take any train or car to University Campus. The Museum of Vertebrate Zoology is a large corrugated iron building situated on the south side of the campus immediately north of the football bleachers.

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVIII

March-April, 1916

Number 2

SEA GULLS AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

By JOSEPH MAILLIARD

WITH TWENTY-ONE PHOTOS BY THE AUTHOR

SAN FRANCISCO BAY has long been known as a favorite wintering place for sea gulls, and several species are well represented upon its waters from early fall to late spring. In the course of years many individuals, of some of the larger varieties especially, have partially lost their natural fear of man, or perhaps it would be better to say have been greatly attracted by the feasts that mankind offers them, and have allowed their appetites to overcome their dread. Flocks of these gulls have been in the habit of following the various ferry and river boats on the bay (fig. 2) for the purpose of feeding upon the refuse thrown overboard from the lunch counters and restaurants, and some have grown so tame that they will not only endeavor to catch bits of bread thrown to them by passengers but have had so much practice that they are quite often successful when the bread is tossed high enough into the air (fig. 3). Occasionally one bolder than the rest will take a morsel from an outstretched hand.

The fishing boats that daily pass in and out of the Golden Gate frequently throw overboard old bait, or the cleanings of fish, and on such occasions are followed by clouds of clamorous gulls, so numerous that they look, at a distance, like a swarm of bees. "Fishermen's Wharf", set apart for the use of the fishing boats, has long been a favorite gathering ground for these scavengers of the sea. In stormy or threatening weather it is a common sight in San Francisco to see gulls, singly or in flocks, sailing overhead, gracefully breasting the breeze, or flying across the peninsula from bay to ocean; while in cultivated fields near the bay they are often to be found following the plow and gathering the fat angle-worms turned up in the moist soil. So the gulls have not been strangers to San Francisco's people. But it was not until last fall



Fig. 2. GULLS AS SEEN FROM FERRY BOAT ON SAN FRANCISCO BAY



Fig. 3. FERRY PASSENGER FEEDING GULLS

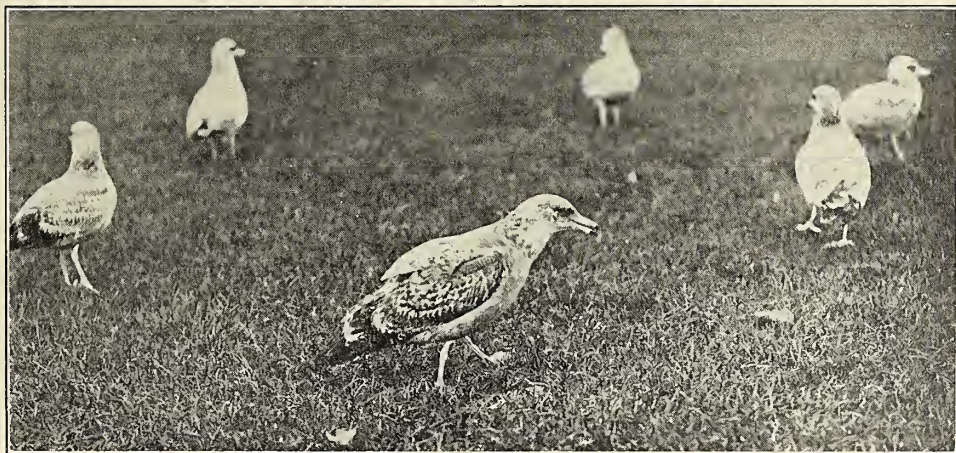


Fig. 4. GULLS LOOKING FOR FOOD ON EXPOSITION LAWN

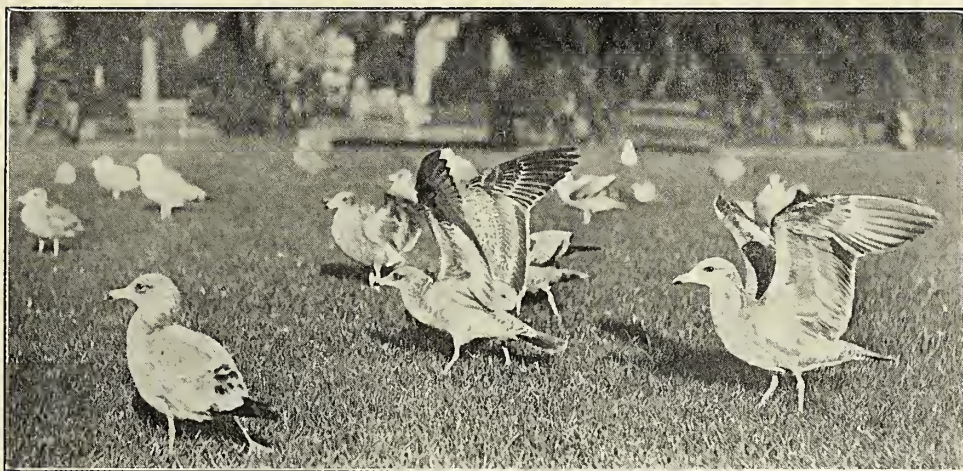


Fig. 5. EARLY ON THE GROUND

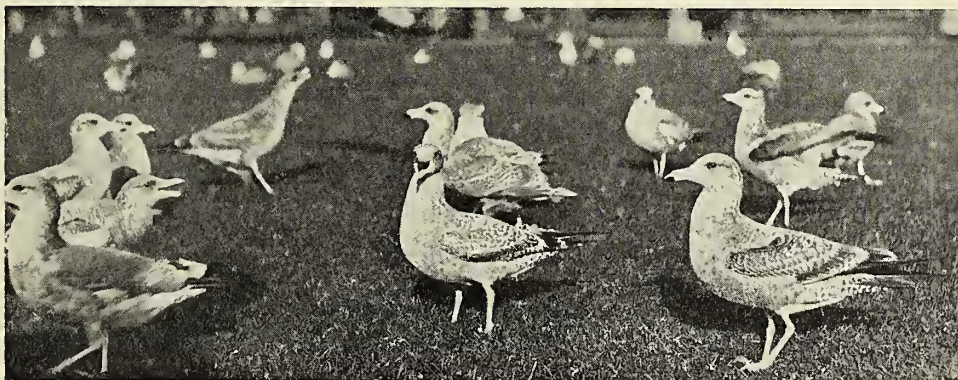


Fig. 6. BIRDS CALLING FOR FOOD

(1915) that the acquaintance ripened into intimacy, and the Panama-Pacific International Exposition was the means of bringing this about.

In the winter of 1914-15, when the lawns of the Exposition grounds were first laid out along the marina, and grass started upon them, it was remarked that flocks of gulls had been attracted thereby and had seized upon these open level spots as fine places to congregate and sun themselves, possibly finding some scraps from workmen's lunch baskets as a pleasing addition to their customary rations (fig. 4). But the matter ended there for that season, the birds drifting away to their breeding places as spring approached. Upon their return last fall, however, to take possession of their new sunning grounds and



Fig. 7. BIRD ON WING IN ACT OF CATCHING PIECE OF BREAD TOSSED TO IT

the fine fresh water ponds they had so delighted in bathing in during the past winter, they found a great change had taken place. The buildings which they had stolidly watched in the making had grown into a marvelous city of beauty and grace, and it was peopled by throngs of human beings. These remarkable beings brought with them food, more food than they could eat, often leaving a goodly share upon the lawns and in many places. At first a few gulls found these gleanings in the early mornings, before the people came, and hastened to feast undisturbed (fig. 5). The news of the feasting spread far and wide, and as the hosts arrived from the rapidly freezing north they joined the earlier arrivals and assisted in the enjoyment of such good things, growing more

bold, paying but scant attention to mankind, and even going so far as to clamor to be fed (figs. 6, 7).

From the first the laguna by the Fine Arts Palace had been a favorite bathing place for the gulls. This beautiful body of water was appreciated as well by some other varieties of waterfowl, among which were some Coots, some Ruddy Ducks, a Surf Scoter, a Scaup Duck, and an occasional stray duck or two of other varieties which would drop in from time to time. There were also tame ducks and some semi-domesticated wild geese on this laguna, but none of these seemed to interfere in any way with the repose or enjoyment of the gulls except in the way of an occasional "scrap" between them and the geese or coots over some bit of food (fig. 8). The gulls, however, mostly congregated by themselves, their numbers varying with the day and hour. At



Fig. 8. GULLS, COOTS AND DUCKS ON LAGUNA OF PALACE OF FINE ARTS

times the laguna would be swarming with them, while a constant succession could be seen approaching from various directions, with as many leaving or merely rising on wing and soaring about only to settle down again. At times the birds seemed to be in quiescent mood and satisfied with calm repose, while at others the scene would be a busy one, with bathing, ducking under of heads, and preening of feathers going on in all directions (fig. 9).

As the gulls grew fat they grew more saucy, and finally took possession of the whole outdoor portion of the exhibition, bathing in any or all of the fountains, even in the small ones inside the smaller courts, roosting around among the benches, occupying the walks and barely moving out of people's way. It actually seemed as if they moved—and then with an air of injured

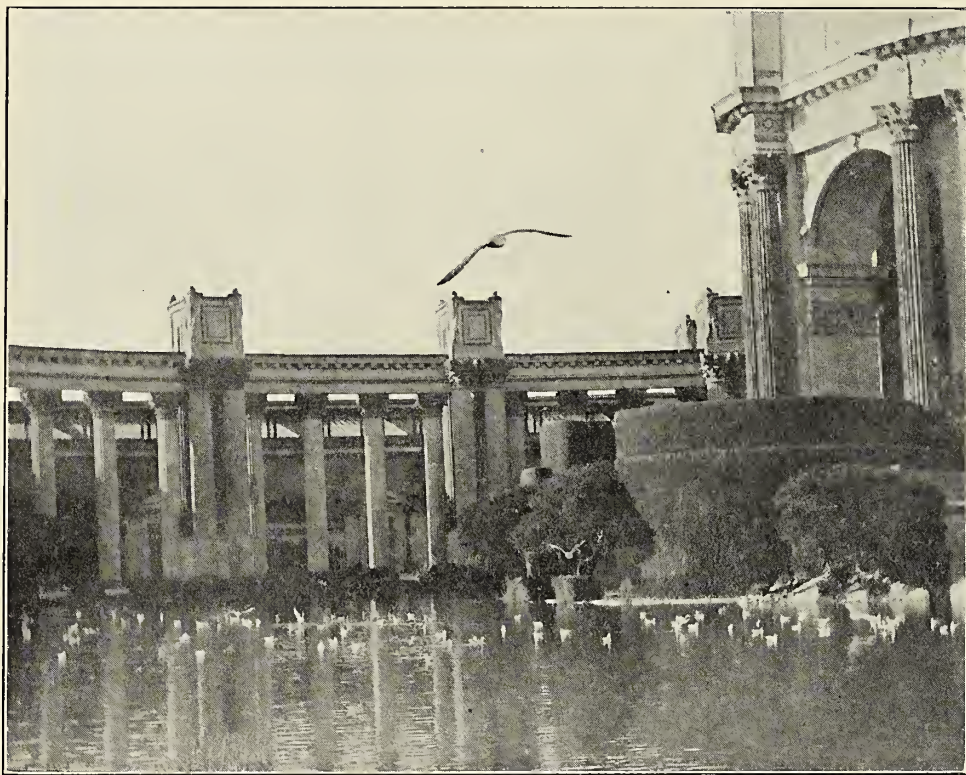


Fig. 9. GULLS ON LAGUNA, PALACE OF FINE ARTS

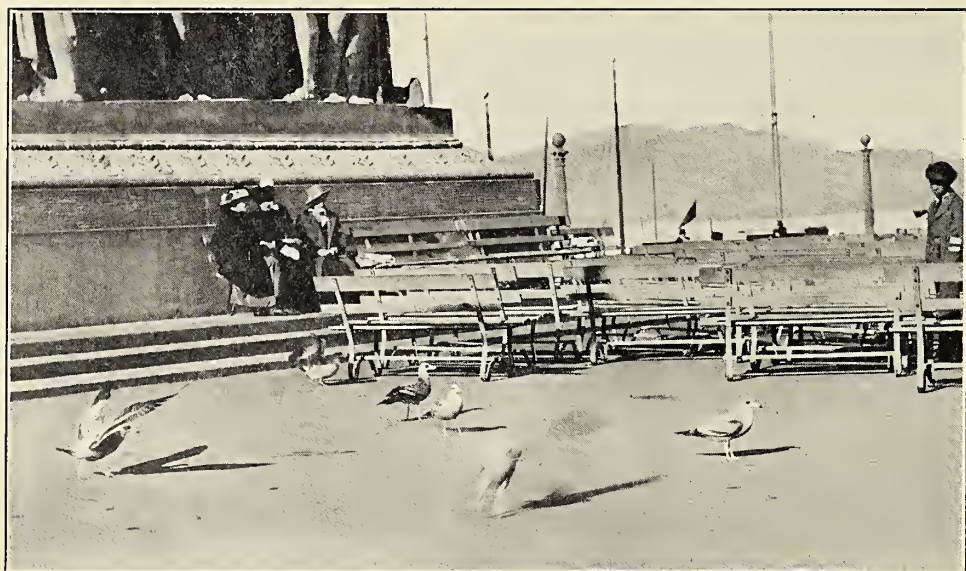


Fig. 10. WAITING FOR SCRAPS OF LUNCH

innocence—only to avoid being stepped upon! (See figs. 10, 11.) As confidence increased between the feathered and the human visitors to the Exposition, many people grew interested in watching and feeding the gulls, and many efforts were made to get them to eat from a person's hand; but when it came to close contact, a certain wariness was always exhibited, and while stories of such confidence were circulated the writer neither saw nor succeeded in bringing about such an instance. In fact, even when a person would remain perfectly still in a sitting position for a good while at a time, it was hard to induce one of the birds to pick up a piece of bread nearer than a couple of feet away from one's own feet (figs. 12, 13, 14).

Strange to say, the first comers in the fall seemed to be almost all immature birds, and a large proportion of them appeared to be birds of the year, as they were in the immature mottled plumage with none of the pearl gray or plumbeous tints showing in the mantles. Later on, older birds seemed more numerous, and toward midwinter the proportion of adults increased greatly. About the middle of November, at the time the writer first noticed the arrival

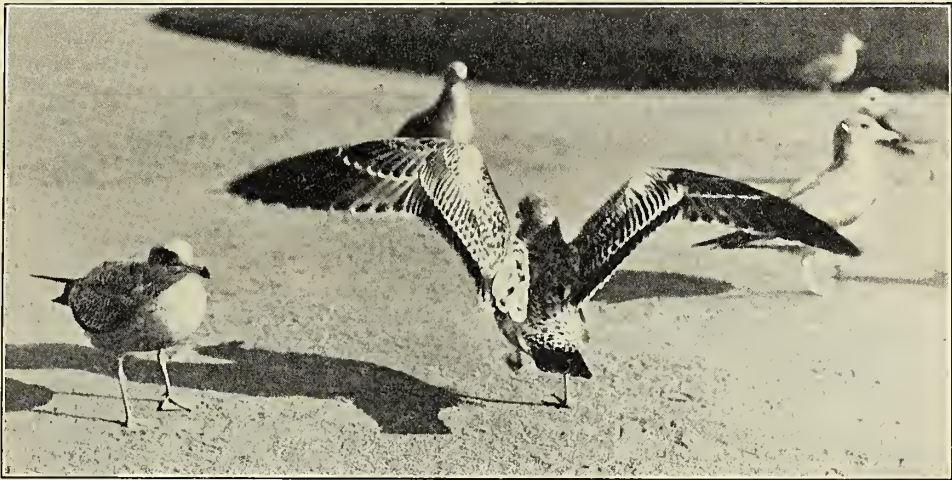


Fig. 11. GETTING OUT OF THE WAY

of the gulls on the Exposition grounds, few but Ring-billed Gulls (*Larus delawarensis*) were to be seen. Later on, an occasional Western Gull (*Larus occidentalis*), or California Gull (*Larus californicus*), appeared among the smaller variety, though it was impossible to say which was which of the two latter species on account of the difficulty in distinguishing immature birds on short notice when one cannot examine the subjects intimately. Still later, in December, appeared the Glaucous-winged Gull (*Larus glaucescens*), easily discernible by its larger size and different markings, and an occasional Glaucous Gull (*Larus hyperboreus*) mingled with the throng, most of these still being in immature plumage but with the color of the adult mantle showing to a greater or less extent. No adult Glaucous Gull was distinguished, but careful study of two or three individuals in immature plumage on different occasions led to the conclusion that the subject under consideration belonged to this species. Upon one of these occasions Walter K. Fisher, of Stanford University, accompanied the writer and concurred in such an opinion.

The Herring Gull did not seem to participate in the general enjoyment



Fig. 12. HUNGRY, BUT A BIT SHY



Fig. 13. A CRACKER FESTIVAL

of the Exposition offerings, or, if it was there, was inconspicuous among the other species; and while the Short-billed Gull (*Larus brachyrhynchus*) was abundant along the actual water line on the edge of the marina it never seemed to care for anything that looked like dry land, as none was identified among the groups that penetrated inland even to a few yards from the water. The Bonaparte Gull was entirely absent from the scene. As far as the Short-billed Gull is concerned this is rather singular, for the reason that this bird is numerous all along the shore line, hovering just above the water's edge where the wavelets cast their flotsam along the northern boundary of the Exposition grounds, and yet never drifting landward with the other gulls to partake of the bounties there provided.

The large area of the marina, close to the water's edge, was evidently a most attractive spot for the gulls, and at times the grassy lawn was densely peopled with them (figs. 15, 16). Strange to say, while the gulls were only moderately timid in the presence of man, and while they must have been accustomed to the booming of surf and the thundering of huge waves, they were very slow about getting used to the noises made by automobiles, auto-trucks, and the racket of the little steam train that ran along the marina. In fact even a passing horse-drawn vehicle would make a whole flock take suddenly to wing, when the birds would hover about for a short time and settle down again (figs. 17, 18). Toward the close of the Exposition more calmness prevailed and finally the flocks of gulls grouped upon the greensward would remain quiet even when the little steam train rattled, chugged and whistled its way along the very edge of their temporary camping ground (fig. 19).



Fig. 14. CATCHING BREAD ON THE FLY; A STUDY IN ATTITUDES

About the strangest scene that the writer witnessed happened one morning when he wandered into the grounds after the Exposition had closed its gates, and found men draining off the fountains and ponds and sweeping out the basins. On this occasion the basins on each side of the main entrance were being drained and men were at work sweeping up the debris that had collected on the bottoms, the water being only an inch or two deep at the deepest part. A flock of gulls was taking a great interest in the proceedings and each individual was on the lookout for some tidbit that might have before escaped attention. But scant notice was given to the laborers there at work, or to anybody passing by, the birds seeming to recognize the fact that this was their last chance at *that* bit of fresh water, anyway. The reflections in this instance were very remarkable and it is quite a puzzle to work them out in the photograph shown herewith (fig. 20).

After the closing of the Exposition the supply of food suddenly dropped, and the gulls' interest greatly waned. Workmen helped somewhat with con-

tributions from their lunch baskets, but there was nothing like the feast of heretofore. At lunch time the workmen about the courts were surrounded by a hungry horde which begrudged each mouthful that disappeared down



Fig. 15. GULLS CONGREGATED ON THE MARINA

human throats, and was not satisfied with the crumbs that fell to its share. Accustomed as they had grown to associating food with the presence of human beings the shortening supply at the Exposition grounds drove the gulls to the idea of following up the people, and before long the birds were to be noticed



Fig. 16. A BATH IN A RAINWATER POOL

as frequent visitors to the parks which are so numerous scattered about San Francisco, where people not only shared their lunches with them but many deliberately took out household scraps to feed them. While the gulls have



Fig. 17. DISTURBED BY A PASSING VEHICLE



Fig. 18. TRAIN COMING



Fig. 19. GETTING USED TO THE TRAIN



Fig. 20. REFLECTIONS IN BASIN OF FOUNTAIN

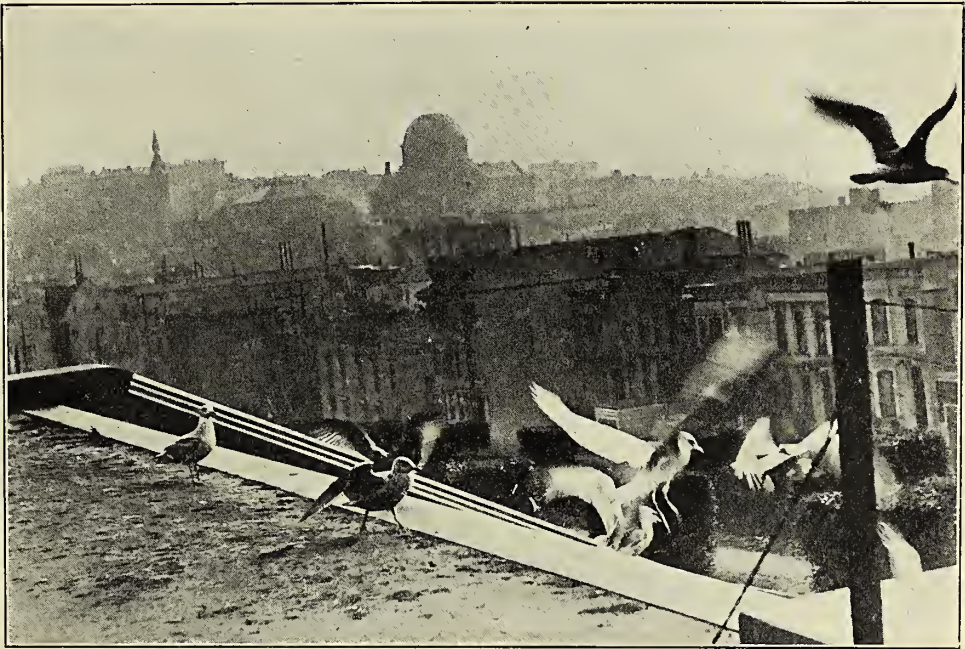


Fig. 21. GULLS IN ALTA PLAZA, CLAY AND STEINER STREETS, SAN FRANCISCO



Fig. 22. A RACE FOR A PRIZE, ALTA PLAZA

scattered considerably at the time this is written (February 10, 1916) there are still a good many to be seen about vacant lots and parks in the heart of the town (figs. 21, 22).

The accompanying photographs are offered not for their worth as specimens of the art of photography, because a long series of cloudy and dull days interfered sadly with the taking of scenes that needed bright lighting to get good effects in motion, to say nothing of many mishaps that occurred, but with the hope that readers of THE CONDOR will be interested in illustrations of so rapidly achieved semi-domestication of wild birds in such an unexpected and unpremeditated manner.

San Francisco, February 10, 1916.

CHARACTERISTIC BIRDS OF THE DAKOTA PRAIRIES

IV. ON THE LAKES

By FLORENCE MERRIAM BAILEY

FROM THE LARGER LAKES that I visited casually during the summer I brought tantalizing, confused memories of small flocks of Ducks shifting back and forth across the passes, Grebes calling across the water, Terns flying hither and thither, Black-crowned Night Herons posing before tule walls, families of Ducks trailing along the tule and cane-bordered shores, and numerous unnamable dots scattered over the surface, in one place one moment, rising and settling in another the next—tantalizing confused memories that rise compellingly again and again and make the call of North Dakota well nigh too strong to resist.

From the one short strip of open shore on Stump Lake that I was able to patrol for a few weeks, however, I brought a few pictures good to review. Foremost among them stands my first adult male Canvasback; let those to whom they are an old story recall the thrill of their first! There he sat on the water in strong sunlight, his aristocratic bill with its straight Grecian line from forehead to tip showing strikingly, his red head glowing, his white canvas back gleaming in the light. The strip of lakeshore, bare and uninteresting before, was distinguished by the sight. It could never be commonplace again. A Canvasback had been there! The solitary aristocrat appeared in the same place once more, to my great delight, so brilliant in the sun that the sight was positively thrilling.

Sometimes the friends that visited my shore line were just a pair of plain every day brownish Gadwalls, but it was none the less a pleasure to watch them and listen to their talk as they fed close in shore and then walked up on the beach together to rest, visiting with low friendly quacks. They might easily have been my friends of the pasture slough, Darby and Joan, as the lake was within easy flying distance.

A Blue-winged Teal was caught resting at the water line one day, but when approached flew swiftly away. A female Golden-eye, doubtless brooding inside some goodly hollow tree bordering the lake was watched swimming in from a distance when she was only a large white spot fronting the angle of a wake until, as she fed along the beach, her bright golden eye showed

plainly in her puffy brown head. As she swam slowly up and down the shore feeding, she passed two Killdeer walking on the beach. In feeding under water she would dive and re-appear, throwing up her head to swallow. When she swam away, two white spots, one each side the tail, stood out like signal lanterns on the back of a car. She is surely a well marked bird. When the farmer pointed out hollow trees where these "Wood Ducks", as they are called locally, had nested in former years, his sister told of having seen the parents fly down from their knot-holes with young on their backs. Another observer added that the young steady themselves by taking hold of their mother's feathers with their bills.

Another Duck that nested in the region, one of the Scaups, was seen on the lake at different times but never near enough to determine the species. A group of three, two of the handsome black-fronted drakes and one of the brown ducks, were seen swimming around close together the 21st of June in what seemed to be courtship rivalry, late though it was. After swimming along peacefully together for a few moments, one of the drakes would suddenly start after the other and dog his steps, swimming at his heels around and around as if trying to drive him off. The duck, meanwhile, holding her brown head high, apparently kept as far as possible from one of the rivals, though it was hard to tell which, the three swam within such a small circle. This droll performance was repeated a week later; but this time when two drakes and one duck were swimming around together a third drake happened along and seeing the group swam in rapidly as if to present his suit to the haughty lady. In any case, one suitor, presumably he, swam close to her ear. As before she held her disdainful head high and soon there were but two suitors, and at last but one. Down the lake could be seen five or six other Scaups, so let us hope that all the rivals were happily mated at last.

Another hint of anserine rivalry was given by two of the large black White-winged Scoters, those interesting Sea Ducks of the far north, here reaching the southern limit of their breeding range. It was the merest hint, but as I watched, two of the red-billed drakes suddenly stood up on the lake and raising their wings till the white patches showed, dashed through the water at each other so furiously that I stood breathless, prepared for what might come. Around they turned and—one swam off to a female spectator on the right and one to a female spectator on the left—and that was apparently the conclusion of the whole matter!

This occurred on the 28th of June, but the Scoters are said to be late breeders. Previous to this exhibition of rivalry during the two weeks that I had been watching them the Scoters seen on the lake had almost invariably been in pairs, a black and a brown one, 2, 4, 6, 8, 10, often widely separated but in sight from one short strip of beach. A party of eight were found together in a bay one day making sociable duck-like noises, but on discovering me they separated out into pairs again. If that were previous to their breeding season did it indicate that they remain paired throughout the year?

Phlegmatic, inadequately describes these great Sea Ducks. Decoys they might well be, you think aggrievedly as you watch them. Surely such rare visitors might do something to at least hold the attention! After sitting like chunks of wood for a long time one of the males might perhaps turn to lie on its side and plume itself with its red bill, tipping up a white-patched wing or pulling a gleaming red foot out of the water. And of course in feeding,

like other divers, they would tip over on their bills and disappear for a few moments at a time.

One of the big fellows did sit up and take notice when a Marsh Hawk I had been watching came out and squealed at me. The transformation was amusing. From lying prone on the water head and neck down, it came up at attention, L, neck drawn high, head alert, and even its short tail tipped up. In a moment, as nothing came, back it dropped at ease, full length on the water. In bathing, *Oidemia* threw off its usual lethargy, ducking, flapping, spattering, and splashing like a canary in a tub. On hearing a noise down the shore one day I was surprised to see one of the big black Ducks go rushing back and forth through the water and then rise and flap its wings till their white flags waved. When a week later I saw the encounter of the rivals, it strengthened my suspicion that *Oidemia* had been showing off.

The white flags show far across the lake and when the great birds fly evenly low over the water the velvety black of the males makes the snow white a conspicuous mark. The disappearance of these white banners when the Scoter drops to its nest is not significant because the bushes hide it then, and the disappearance of the banners when it lights on the water would hardly deceive any enemy, for *Oidemia* is so large and black it stands out across a lake. But on the other hand, to a female Scoter happening to be under water when her mate flew, might not the white flags be a decided help in distinguishing him from black-fronted Scaups scattered out over the lake? When seeing a group of black-fronted Ducks, large and small, on the water one day I thought I had at last found a family of Scoters, but on nearer approach the small ones proved to be Scaups! If it be true that the Scoters remain paired throughout the year and the two forms *deglandi* and *americana* are together in winter the white eye- and wing-patches may well be of use in helping pairs keep together, especially in flight. In taking flight, the Scoters usually seemed to rise easily, but one that I watched flapped and splashed for some time before lifting its heavy weight.

As you watch these great black Sea Ducks sitting like decoys on the still water or flying over a smooth lake, they seem decidedly out of place. But wait till a heavy wind has been blowing for a few days, waves are hammering the shore and all the other Ducks have retreated to sheltering bays. Then perhaps you will see, as I did, a pair of *Oidemia* head out around a point into the teeth of the wind, and as you marvel at their temerity see them settle themselves to ride the billowing waves in their own proper marine character.

The few Ducks of Stump Lake were always interesting to watch in their quiet feeding bays and along the shores both for what they were and what they might be, for one unseen before might appear at any moment. But the spectacular birds of the lake were the Gulls and Terns.

The Black Terns are always striking birds, and at Sweetwater Lake there were so many of them that it might have been called the Lake of the Black Terns. *Hydrochelidon*, Water Swallows, they certainly are, flocks of them skinning low over the surface of the lake, back and forth; hordes of them trooping across the passes and weaving in and out across the sky, their harsh grating *kek'kek* commanding attention from the shore.

As I sat behind the trees and watched them, fascinated by their maneuvers, they hunted close along shore, their actions much like those of the white Tern. On long-pointed wings one would approach, the silver line from neck to elbow

contrasting well with its jet black head. On it would come with bill pointing down till suddenly it put on brakes by spreading its tail till from below the white under coverts gave the appearance of a white tail. Checking its motion so abruptly that it would almost go tail over head, it would plump into the water bill first, giving the droll effects of a sensient bill in pursuit of its food. Sometimes the handsome *Hydrochelidon* would flap slowly low over the surface, its black head and neck mirrored in the water; again it would hover above the lake like a Sparrow Hawk, and dive like a shot arrow.

A white Tern, the Common Tern, that I watched on Stump Lake hunting back and forth along three or four yards of shore, would hover, body almost motionless, in the face of the wind, looking down watching the incoming waves with black-crowned head bent and red bill pointing down till its quarry was espied, when it would drop straight as a plumb line so close before the oncoming waves that it would be spattered by the foam; then with its morsel secure in its bill it would rise again in the teeth of the wind sometimes almost as straight as it had dropped, sometimes with a graceful scoop upward. Back and forth and up and down its short beat it came and went while the Franklin Gulls sat in the sun, walked soberly along the beach, or flew out over the lake to ride the waves, rocking like miniature boats with black bows and sterns. The little Tern when tired of hunting joined the Gulls on a sand spit, as it lit, holding its wings for a moment high over its back, in the beautiful pose so often assumed by water birds.

On the quiet side of the spit the Franklin Gulls disported themselves, some bathing—splashing and ducking—others feeding. A comical effect was produced by one that was looking for food with its head under water, for its raised wings balanced a headless body. When the head reappeared with a tidbit dangling from the bill, an observing neighbor made a dash for the hardly won morsel. While the Franklin Gulls, some with black heads, some with white foreheads and smoky crowns, amused themselves on the sand spit, a few of the large Ring-bills stalked around among them conspicuously. After a storm a close row of the Franklins sat on the lake side of the sand spit with the spray dashing over them. Forty or fifty of them sat in a row at one time facing the wind but with heads turned back resting on their shoulders so that in looking down the shore a long line of gleaming white gull breasts shone in the sun, a beautiful picture against its background of pale green water. Great numbers of the black-headed Gulls were massed on points and sand bars along Devil's Lake, early in July, while others were seen performing aerial maneuvers, circling in complex form, mulling around and around high in the air.

But *franklini* is not to be remembered as a shore Gull. Going to my window in a farm house one day I started with surprise, for a flock of the black-headed birds were flying swiftly in, apparently headed straight for the wall of the house. Wind Gulls they are called locally, as they are said to circle around high in the sky "hollering" before a storm. But they are most widely known for their habit of following the plow—four-horse gang plows I saw them with. Ring-billed Gulls, too, were often met with, flying low over the broken ground or sweeping over the grassy swells looking for small rodents.

It always gave a jolt to one's preconceived notions of Gulls to meet them on land; but after coming to know the great prairies that roll on to a blue

horizon line like the ocean, blown over by the strong fresh wind from far away, it seemed rarely fitting that these great white birds should sail through their sunlit skies. And how they sail! A stirring sight was seen one day, a great wedge of Franklin Gulls like Canada Geese flying high through the sky as if bent on sweeping over and beyond the prairies down to the southern seas.

Washington, D. C., May 23, 1915.

THE FARALLON RAILS OF SAN DIEGO COUNTY

By LAURENCE M. HUEY

WITH FOUR PHOTOS BY LAURENCE M. HUEY AND DONALD R. DICKEY

DURING the past seven years considerable attention and study have been directed toward the home life of the Farallon Rail (*Creciscus coturniculus*), and in many cases the results have proved quite interesting. I have felt, however, that, although nest and egg descriptions have been given by other collectors, the following dates and nesting notes might add materially to what is already known.

I have spent hours and even days on the Rail marshes at all times of the year, and find that even as early as February, on clear mornings, the *clee-clee'-ee* (accent falling on first syllable of last word) may be heard in many places on the marsh. This is particularly true when one has walked about the



Fig. 23. NEST AND EGGS OF THE FARALLON RAIL: THE PRIZE, HIDDEN AWAY IN A DENSE SALICORNIA CLUMP

marsh enough to disturb the birds. This call is chiefly used during the early mating season, and also as a protest against intruders in their domain. Occasionally, however, I have heard it even in the late fall.

With these birds there is a noticeable lack of uniformity in their nesting dates, as well as a great variation in the nests themselves as constructed by different pairs of birds. Sometimes the nests are raised well off the ground, but this is unusual. The more typical ground nests are greatly affected by the tides. Some that I have seen were fully five inches thick, with as many as three distinct layers, showing how often reconstruction had been necessary.

The earliest nesting date of which I have record was March 24, 1912, when a complete set of five eggs was taken. In this case the nest had been rebuilt three times on account of recent rains and high tides. The latest date which I have encountered was May 25, 1909. On that day I started on a last casual "hike" through the marsh with nothing more than that undying hope, born in all bird hunters, to offset my slim chance of finding anything so late in the spring. Suddenly, however, I flushed a Farallon Rail, and after careful search I found a well elevated nest, some ten inches above the ground, which contained four partly incubated eggs at that time. These eggs are the smallest which I have ever seen, tending, in fact, to be almost runts. They measure, respectively, .87x.69, .94x.74, .95x.72, .95x.73, with an average of .92x.72. The normal eggs average about 1.02x.90, these figures denoting inches.



Fig. 24. FARALLON RAIL, PHOTOGRAPHED IN CAPTIVITY:
UNDECIDED WHETHER TO CROUCH AND HIDE, OR TO
DIVE INTO THE DENSE MARSH VEGETATION

Another set, which is the one shown in the photograph (fig. 23), was found on the late date of May 13, 1914. The eight eggs of this clutch constitute one of the largest authentic sets known. It was situated in the thickest of salicornia, or fleshy marsh weed, and was found after a steady tramp of four hours duration.

The method of search for these rarities may be of some interest to CONDOR readers. Sometimes their discovery is due to sheer good luck, but much more often it is the fruit of hard and persistent work. The thickly matted marsh growth is so dense that it is impossible to see through it, so that one has to turn

it over, inch by inch. This is accomplished by a careful swing of the foot, which at first is exceedingly tiring, but which grows comparatively easy as practice makes it a mechanical action. One thing is interesting as a side light on this bird's shyness, a habit that is a constant aggravation to the collector. This is the astonishing ease with which the birds bring themselves to abandon incomplete sets when they are discovered. Although I have found several incomplete sets, I have in no instance succeeded in collecting a full set from the nest at a later date. In every case the bird had deserted when I went back. Of course, with the method of search employed, one is bound to kick into some of the nests and disturb the surrounding marsh weed before discovering them. That a naturally retiring bird should desert under these conditions is, of course, not surprising. On at least two occasions, however, I have found nests containing incomplete sets by a lucky glimpse of the eggs through an opening in the protecting growth above them, while I was still at a considerable distance from them. In these cases, I have turned aside without apparently notice-



Fig. 25. A FARALLON RAIL IN ITS SALT MARSH HOME; PHOTOGRAPH OF A CAPTIVE

ing the nests, and have left the vegetation absolutely untouched in their vicinity, and yet the result has been the same—desertion!

The nature of the food of these birds remained unknown to collectors for many seasons, until the fall of 1912, when the stomachs of a small series were saved for examination. On close inspection, I found the remains of a species of small "bug" that lives very abundantly on the salt marshes where the birds were taken. I then gathered a number of these animals and sent them to Joseph Grinnell of the Museum of Vertebrate Zoology, to whom I am indebted for forwarding them to the United States National Museum for identification. The reply was as follows: "They are Isopod crustaceans belonging to the species *Alloniscus mirabilis* (Stuxberg)." Appearances to the contrary notwithstanding, it's really just a small bug! I believe this to be the chief food of the Rails living in the salt marshes of this region, and as nearly all the tidal sloughs abound with these small creatures, the food problem cannot be a serious one for the birds.

Several collectors have spoken to me in regard to the migration of these

birds. I, myself, am of the opinion that there is no migration at all in this region. At any rate I have seen or taken birds in every month of the year, so it is certain that these San Diego marshes are at least included in both their breeding and winter ranges. It will be almost impossible to judge as to migration, however, until their breeding presence or absence has been more definitely ascertained at more northern stations. For the present, however, several things give me the strong belief that with us the individuals are resident locally the year around. Within San Diego County itself, they seem fairly well distributed through the coastal salt marshes. They are, of course, more common in some localities than in others, but they have been taken, to my knowledge, both in spring and fall, from each of three different marshes in this general vicinity.

A peculiar experience befell me on November 25, 1912. While hunting these small birds, one flushed near my feet and flew out over the mud flats to a distance of two hundred and fifty yards, and alit. It was low tide and as I started in pursuit, the bird was seen to rise and retrace its course directly toward me. Finally, as it came within range, I took aim at it but did not



Fig. 26. SORA AND FARALLON RAILS: THE BEARING OF THE LITTLE BLACK WAS ALWAYS PROUD, BUT THE CAROLINA WAS A TYPICAL RAIL, HEAD DOWN, TAIL ERECT, AND FOREVER SNEAKING OFF SIDEWAYS AS THOUGH ASHAMED OF HIMSELF

shoot as I was puzzled by the bird's actions. Closer and closer it came until it was within "aux" range, but still I didn't shoot, and still the bird held steadily to its course. Hastily I decided to try and catch it alive, so I threw down my gun, and when it came within reach, I quickly knocked it to the ground with my hand. Pouncing after it, I tried to grab it, but it was too quick for me and eluded my futile grasp. It was apparently uninjured and arose, flew a few yards, dropped into the thick marsh grass and was seen no more, although my dog and I searched diligently for some time.

On March 16, 1915, while on a tramp through the National City marsh, a live and uninjured Carolina Rail (*Porzana carolina*) fell my prey, and was taken home and confined to the screen porch until such a time as I could conveniently take photographs of it in captivity. This time came on the 18th, and as I was returning to the salt marsh for natural surroundings for the photograph, a live female Farallon Rail was also captured. The bird was seen running through a thin place in the marsh growth quite close to me, and was pounced upon and seized. It also was confined to the screen porch where the two birds proved quite companionable. They ate freely of the food offered

them, which consisted of bread crumbs, "garden bugs", and some of the "marsh bugs" before mentioned.

On March 19, I took both captives again to the marsh for photographs. On the way from the car to the spot selected, a gnat lit on my companion's finger and upon holding the Black Rail near, she grabbed greedily at the insect. She seemed rather vicious at all times, pecking angrily at anything offered her—sticks, fingers and all. A small, round clump of salicornia, perhaps three feet in diameter, was selected for the background effect, and operations began. The little rail proved the more elusive of the two. She would dive into the dense mass, exactly as a duck dives in water, and would then crouch motionless, as if hiding. The walking positions of the two species were noticeably different. The little Black was always proud, with head erect and no jerky movements while walking, but the Carolina was a typical rail, head down, tail erect, and forever sneaking off sideways as though he were ashamed of himself. Finally on March 20, after making what pictures I wanted, I turned the two rails free to roam and search for food and mate at will.

Many times later, I searched in vain for the hidden, speckled beauties which the little black mother probably had hidden away somewhere under a sheltering marsh clump, but I never found them. Let us trust they hatched safely into fuzzy youngsters, and were led by their mother through the protecting marsh growth down to the feeding grounds in the muddy beds of tidal streams. If such was the case you may be sure she warned them to look out, at all times, for that fellow who would poke sticks at them as he once had at her, to arouse the spirits of a crestfallen captive into photographic sprightliness.

San Diego, California, December 13, 1915.

THE NUTCRACKERS OF YELLOWSTONE PARK

By M. P. SKINNER

THE CLARKE Nutcracker, or Clarke Crow (*Nucifraga columbiana*), is sometimes known as "Camp Robber", possibly because of the rather superficial resemblance it bears to the true camp robber or Rocky Mountain Jay. But his livery is black and white and gray as against the various tones of gray alone, as shown by the jay. In the Yellowstone Park the nutcrackers are everywhere; but where they occur in the large, open prairies and meadows, it is evident that they are only flying across between the heavy evergreen forests. They are never seen in the large flocks reported elsewhere, but are usually found in one's or two's, or perhaps in small flocks of a half dozen. The largest flock reported was made up loosely of twenty-four individuals. While not migratory birds, strictly speaking, they do move up and down the mountains at the change of the seasons. In summer they are at all elevations, but in winter they are all below 7000 feet. One snowy, stormy day they were observed in numbers passing the top of Mt. Sheridan at an elevation of 10,000 feet. The vicinity of Mammoth Hot Springs and Fort Yellowstone seems to be a center of abundance both winter and summer. A careful estimate gives from twenty to thirty birds as constantly in this neighborhood; but as this bird

is an erratic wanderer at best, this number is greatly exceeded at times. No doubt it is the large supply of pinyon cones together with kitchen scraps that draws them here.

Nutcrackers will eat anything. They forage about the stables for grain, come to the kitchen doors for scraps, especially pieces of meat and bones; in the mountain wilds they pick out the seeds of pine cones, eat cedar berries, and devour large numbers of insects. They have even been seen to catch their prey on the wing, making very flycatcher-like sallies from the tip of a tall pine. Sometimes they walk over the ground like crows, searching for ants and ground insects. But the nutcracker really seems to prefer pine seeds, especially those from the pinyon pine. Sometimes they will tear the cone to pieces even while the cone is still fast to the branch, often perched at the very tip of a bending branch, or even underneath, clinging in a manner creditable to a chickadee or a nuthatch. More often the cone is detached and carried away to a strong limb where it is held by one foot while the bird strikes strong, downward blows at it with its pickax-like bill. At times the bird will secure a seed at every second stroke and at the same time tear the cone to shreds. Being bold, independent free-lances these birds will vary their methods by robbing a pine squirrel of his cone; even going so far as to knock the squirrel from his limb with one blow from their bills at the end of a long, swift swoop. The pine squirrel knows this, too; and it is delicious to see the squirrel, whose own abilities as a robber are not small, glide into some protection and hurl vituperation at his enemies. Nor are the nutcrackers at all backward at "sassing" back. Many a time the somber, evergreen forests are enlivened by such a squawking match, joined in by all the squirrels and nutcrackers in hearing.

The nutcrackers do not restrict themselves to the troubles of their own species. On one occasion two Mountain Blue-birds had a "little difference" near the writer; and while they were hard at it, the nutcrackers commenced to collect until there were four about, each trying to mix in. One nutcracker became so excited that in rising from the ground he struck a nearby wire gate and knocked out several feathers and partially stunned himself. Nor is their pugnacity confined to small birds. Let a hawk appear and he is mobbed by all the nutcrackers in sight, as well as by all within hearing of the squawking birds. They usually attack a hawk from above, striking it between the shoulders; the hawk tries to escape by circling up until he leads his tormentors so high that they are forced to raise the siege and return to terra firma. Occasionally the hawk will escape by diving into a thick tree-top where he can turn and drive off the little terrors. Western Red-tail Hawks are often attacked by the nutcracker; but at times he will find a Swainson Hawk, a very inoffensive hawk in the Yellowstone, and usually the nutcracker contents himself with only a peck or two at *him*.

Nutcrackers combine in themselves the peculiar habits of woodpeckers, crows, and jays. Almost every time one sees these birds he finds them doing something either new in itself or done in a new way. They will hammer on a limb and even jab their bills into crevices in the bark after insects in true woodpecker fashion. During the breeding season the nutcrackers are exceedingly quiet; that is, quiet for nutcrackers, but at all other times they are as vociferous, and as big scolds, as the blue jays of the East. They are wild, restless, and noisy; and they have a whole series of cries and squawks, most of them shrill and strident; their favorite is a rattling "*kar-r-r-r-ack, kar-r-r-r-ack*". At times they seem to become confidential and then they sput-

ter out a whole conversation in low tones. When on the way, going somewhere, the flight is strong, steady, and even; but when the journey is over, the wings are shut and the bird plunges forward in one long swoop, opening his wings and sweeping up to his perch. While descending from a height the nutcrackers pitch down either in one long swoop, opening their wings with an audible, explosive burst, and curving up to the landing places; or they will take a series of such plunges. When crossing between two nearby groves, they do it in long, undulating swoops. They are given to perching at the tip of some tall pine that is itself at the top of a mountain, or on some commanding position where the country can be surveyed for miles in every direction. When they drink they turn the head sideways and drink through the side of the long bill. They can be tamed and kept about the house, becoming as impudent and mischievous as crows.

Nutcrackers have their own way of building their nests. Just think of birds that build their nests in February and bring forth their naked young in March, long before the snow has left the ground! These birds are so secretive about their nest that they make a series of stops fifty feet apart and survey the country carefully from each stop. About February 1, at Fort Yellowstone, elevation 6300 feet above sea level, the birds are mated and the building of the nest begins, each bird of the pair doing its share. The thick top of a cedar, or other evergreen, is selected, with a convenient crotch about twelve feet from the ground. First a rough platform of twigs is built. These twigs are broken from a cedar (western juniper) by a quick, wrenching jerk assisted by the cutting edges of the bill, and carried to the site. Here the material is piled in the crotch till the mass reaches a ball about nine inches in diameter and six inches high. The nest proper is deep and cup shaped, about six inches in diameter, and has walls an inch thick; it is built of cedar or pine needles and the inner lining of grass stems and shredded juniper bark, each strand turned into place by the bird squatting down on it and twisting it in. A few horse hairs and bits of string are usually included in the lining. Four gray-green eggs, with irregular, gray-brown markings are laid between February 28 and March 3, and the brooding commences immediately. At such a time the brooding bird is subjected to all the vagaries of truly wintry weather. Often she sits through raging snowstorms protected only by the tuft of cedar needles over the nest, and many times has the writer seen the bird actually on the nest with the thermometer below zero. Under such conditions she draws herself down with only her tail feathers and perhaps her bill showing above the rim of the nest. She is very fearless, even submitting to capture rather than leave the nest; when she leaves, she does so quietly, and returns immediately after the intruder is gone. After brooding twenty-two days the young are hatched, naked of course, and with their eyes closed. Four weeks later the young leave the nest and by May 5 are fully feathered and shifting for themselves. Notwithstanding this early start there is no evidence to show that a second brood is raised. At higher altitudes the nesting is somewhat later, but at that it is safe to say that the latest of the young birds are able to care for themselves before the end of May.

Summerville, South Carolina, January 27, 1916.

A CHAPTER IN THE LIFE HISTORY OF THE WREN-TIT

By WALTER C. NEWBERRY

WITH TWO PHOTOS BY TRACY I. STORER

DURING the nesting season of 1915 it was the writer's pleasant privilege to closely observe a pair of Intermediate Wren-tits (*Chamaea fasciata fasciata*). Many things were noted of much interest, supposedly because the bird was an entirely new species in my own experience. But when it came to an attempt to find out what other observers might have learned about this unique bird, so as to make comparisons with the results of my own observations, I was surprised to find that practically nothing had been published in regard to the nesting behavior of any of the subspecies of the wren-tit. The index to bird literature maintained at the California Museum of Vertebrate Zoology, showed only bare records of occurrence in many localities, and a few nesting dates and brief descriptions of nests and eggs. The following notes are, therefore, offered to CONDOR readers in the belief that they will add something to our knowledge of the life history of the wren-tit.

A piece of vacant property in North Cragmont, Berkeley, with an area of about 100 by 150 feet, was the chosen foraging ground of this pair of wren-tits and they were never observed to wander farther afield. Along one edge of the lot was a small creek with thick clumps of willow on either bank. The rest of the lot occupied higher ground and was scatteringly covered with thick clumps of



Fig. 27. NEST OF THE WREN-TIT IN BACCHARIS BUSH

poison oak (*Rhus diversiloba*), chaparral brush (*Baccharis pilularis*), and blue witch (*Solanum umbelliferum*). The open spaces were grown up with weeds such as cow parsnip (*Heracleum lanatum*), horehound (*Marrubium vulgare*), teasel (*Dipsacus fullonum*), and long grass. The only tree on the higher portion of the lot was an elderberry (*Sambucus glauca*) about twenty feet high.

The partially built nest was discovered on March 23, and only cautious approaches were made while construction was going on for fear of disturbing the birds and causing them to abandon operations. But few facts were noted during this time. Apparently both birds were engaged in building the nest, this conclusion being drawn from the facts that the two were in sight the greater part of the time and that at no time while the birds were under observation throughout the entire nesting period could the sexes be distinguished. Another thing noted was that the birds always approached the nest over the same route and each time with much caution, this being the case as long as the nest was occupied.

They always slipped quietly through the brush back of the nest, coming into view almost directly under it and on the ground, and then mounting to it from twig to twig.

When visited at 7:30 A. M. March 25, the nest was completed and neither bird was in evidence. It was a rather deep cup-shaped nest, compactly but lightly built, and laced, for its principal support, 21 inches from the ground, to the side of a perpendicular stalk of teasel coming up through the clump of baccharis, a few smaller twigs serving to steady it. The materials used in its construction were weed and bark fibers and dried grass, with a thin inner lining of dried grass and horse hair. The following measurements were made after the young had left and when the nest was slightly distorted and otherwise rather the worse for wear: Outside, depth 2.75 inches, diameter 3 inches; inside, depth 2 inches, diameter 2.90 inches.



Fig. 28. WREN-TIT ON ITS NEST

From March 25 until March 30 there was no change in conditions, and neither bird was seen near the nest. The weather turned cold and rainy during this interval and it is possible that further operations were delayed on that account. March 31 at 4 P. M. one egg was in the nest. Coincident with this the weather had become warm and dry. On April 1, the nest contained two eggs. One bird, assumed to be the female, was flushed from the nest; the other was singing nearby.

April 2, at 4 P. M., there were three eggs in the nest; female (?) flushed, other bird not seen. April 3, 5 P. M., no change. Parent bird flushed from nest. April 4 no change. A note was made at this time which perhaps suggests why

so few wren-tits' nests are found. The bird remains on the nest, which is well concealed in the leafy portion of the bush, and is only flushed when the twigs within three or four inches are disturbed. Then, instead of a demonstration against the intruder or an attempt to lure him away, she slips quietly over the side of the nest and is gone, taking full advantage of any cover that can be found.

April 5, 5 P. M., parent bird sitting close on nest. From this date until April 20 incubation was carried on, one or the other of the pair being upon the nest practically all the time. The photographs accompanying this article were taken April 9, when the bird proved to be a fearless subject. April 20, when observed at 7:30 A. M., all the eggs had hatched and the nest contained three young. Thus the length of the period of incubation (from the laying of the third egg) was eighteen days, or figuring the time from April 5, from which date one or the

other of the pair was upon the nest continually, it was fifteen days, this latter probably being more exact since the eggs hatched simultaneously.

From April 20 until May 1 several observations were made daily. One or the other of the pair covered the young continually, but not once were they seen feeding. However, on April 23, when I was leaning over the nest, a slight noise caused one of the young to raise its head and open its mouth. On April 26 the young had almost doubled in size, their eyes were beginning to open, and the feather tracts had become clearly defined, with indications of pin feathers upon the crown of the head and along the edges of the wings. This was the first indication of plumage up to this time, for the birds appeared to be perfectly naked when hatched, not even down feathers being in evidence. By May 1, the young had commenced to feather out. The crown of the head, scapulars, inter-scapulars and underparts were becoming well-clad, and the flight feathers on the wings were breaking through their sheaths. The tail feathers were still only rudimentary.

Unfortunately no further observations were made until May 4. On that date, between 9 and 10 A. M., both birds were busily engaged in foraging for food and brought fifteen capacity loads to the nest at fairly regular intervals. The food was all secured in the immediate vicinity and each load was divided as equally as possible among the three hungry youngsters. A small green caterpillar, a larva of one of the Geometrid moths, seemed to be the favorite, or perhaps the most available, article of food. A few angle-worms were brought, among other things not clearly recognized, and one small white moth was disposed of easily, wings and all.

The old bird would sing loudly when a short distance from the nest, even when carrying two or three caterpillars in its bill. Always when a foot or so from the nest it would give a soft clucking sound which at once produced intense excitement among the young and caused much stretching of necks and gaping of bills. I hardly believe that the wren-tits practice regurgitation, although they would place their seemingly empty bills deep into the mouths of the young and instantly still their clamoring for food. Also on nearly every trip to the nest with food, fragments of excrement were carefully removed, carried a little distance away and dropped.

On May 5, between 8:30 and 9:00 A. M., nine trips with food were made, and one of the young in its impatience climbed out of the nest and spent a few moments perched upon a twig six or eight inches away, as if hoping to intercept the old birds and secure more than its share of food. This effort was unavailing as it received only its lawful share. Two fairly large winged moths were eagerly accepted as food, although swallowed only with much difficulty.

May 6 at 1:30 P. M., the young were fed twice within five minutes, when apparently the great moment had arrived and as if at a signal all three, now fully feathered, fluttered from the nest and remained perched contentedly upon nearby branches. Thus, sixteen days from the time of hatching, the nest had ceased to be a necessity and was abandoned. On May 7 the young were easily located, still only a short distance from the nest, by the actions of the old birds who for the first time seemed truly worried at a strange presence, and gave frequent voice to their alarm note which Grinnell (CONDOR, xv, 1913, p. 179) has described as a "harsh clicking sound, rather loud and set off in abrupt segments." The young were still, figuratively speaking, under the wing of the parent birds when last seen, and still seemingly unable to forage for themselves.

They would rather impatiently call attention to themselves by giving utterance to two high pitched clear notes similar in tone and interval to the beginning of the song of the mature bird.

To summarize briefly the information gained by this series of observations: March 23, nest partially built; March 25, nest completed; March 31, one egg in the nest; April 1, two eggs in the nest; April 2, three eggs in the nest; April 5, brooding began; April 20, all eggs hatched, incubation thus requiring 15 days, or, at most, 18 days; April 26, young open mouths at a slight noise although feeding had not been observed, and they show well-developed hair-like pin feathers; May 4, young well feathered out, and are fed on an average of 16 times an hour; May 6, birds flew from the nest, 16 days after hatching.

Berkeley, California, January 20, 1916.

THE NEW MUSEUM OF COMPARATIVE OÖLOGY

By WILLIAM LEON DAWSON, Director

ON THE 27th of January last, a state charter was granted to the Museum of Comparative Oölogy of Santa Barbara. This was the first notice to the public of a movement which had been quietly launched several months before and which, needless to say, had profited by much private counsel, both scientific and lay, before making its corporate bow. At the request of the Editor of THE CONDOR, I am writing at some length of the *raison d'être* and purposes of the new institution and, more briefly, of its proposed methods and its personnel, of its building plans and its more immediate program.

An institution, like an invention, is the realization of a dream. Now it is of the very nature of dreams to appear fantastic, impractical, "visionary". But Professor Langley's dream of a heavier-than-air flying machine has become a substantial, if not a "sober", reality; and Mr. Smithsonian's vision of an institution "for the increase and diffusion of knowledge among men" has become the bulwark of science in America. However, the dreamer of the Museum of Comparative Oölogy claims no kinship with these illustrious men. He is only one of the crowd, dreaming over again a very ancient and most fantastic dream. For what farmer boy, seduced from the furrow by the warm breath of spring, has not turned aside to witness the drama of springtime as it was being enacted in a neighboring hedgerow! Those painted oval souvenirs, did they not symbolize for him his very interest in life? And what red-blooded youth, poring over his "cabinet" of birds' eggs, has not dreamed of a collection which should embrace not only the birds of his township or state or country, but the nests and eggs of the birds of the entire world? Of all who started down the vista of that golden dream, some few only persisted until their hoardings began to take on a faint color of value, scientific value. Finally one said, "It cannot be done by one alone. It cannot be done in a lifetime, not even by a millionaire. Come on, boys, let's do it *together!*" Coöperation, then, is to be the keynote of the Museum of Comparative Oölogy.

But is it an altogether fantastic task, this heaping together of all kinds of birds' eggs? Not a bit of it! *Qui bono?* To what end, then? To the end that we may interpret *life*. Some day it will appear as comical as it really is, that

anyone should ever have attempted to classify birds on the strength of variation in any single set of characters, whether of feather arrangement (pterylosis), feather structure, arrangement of muscles, or even of the bony structure itself. Position in any scheme of classification, that is, relationship and phylogenetic history, is determined by the sum of characters; and determination of the value of any one factor in development involves a knowledge of the rate of change. Certain strongly marked characters may have been so recently, that is, so rapidly, acquired as to be almost valueless in determining the deeper, truer, historical relationship. Other characters, apparently no more distinctive, may yet really be so deep-seated, so little subject to change, as to yield conclusive testimony as to cousinships in the hoary eld. Now it appears that in the complex of evolved characters which go to make up a bird, although subject itself to a high variation, no single element is more stable, more conservative, more phylogenetically eloquent, than that of the egg. No single character of the egg, viewed externally, is negligible. Size, color, shape, texture, surface, number even,—all are eloquent of relationship and history. Save in the order Passeres, where the tendency to vary, long latent or suppressed in the egg, has burst into sudden and highly complicated efflorescence, a comparison of egg-shells is exceedingly instructive. This does not mean that comparative oölogy is a substitute for comparative myology, or comparative osteology, or even pterylosis; but it does mean that the egg has its own testimony to offer, and that it is able to throw a powerful side light upon history, and so upon the scheme of classification.

So important is this claim that I pause to note a few instances. The classical example is that of the Laro-Limicolae. The older science, content with appearances, and deceived by homoplasy (that is, the concurrence of forms superficially similar, issuing from diverse stocks, which have been acted upon by uniform conditions), had, in a sort of childish helplessness, ranged the Gulls and Terns alongside the Albatrosses and Petrels. Whereas a glance into any egg cabinet shows that the heavily-colored eggs of the Gulls and of the Shore-birds are so similar as, in so far forth, to proclaim unity of origin in the parents; while the single white egg of the Tube-nosed bird is at the farthest remove of an entirely different line of development. The oölogist could have told (and did tell) at a glance what the older ornithology failed to discover. In like manner, the close relationship between the Herons and the Cormorants, testified now by the anatomist, but difficult of comprehension on the part of the casual observer because of the birds' very dissimilar appearance, finds instant confirmation in the drawer of the oölogist. Eggs of the Black-crowned Night Heron could be palmed off for those of Baird's Cormorant, and vice versa. To take but a single instance of a claim to which the anatomist has not yet consented: The oölogist knows that the heavily-colored egg of a Loon represents age-long differentiation from the primitive uncolored type exhibited by a Grebe's egg. The separation between Loons and Grebes is a very ancient one; yet the anatomist, deceived again by homoplasy, and underestimating his own data of diverse osteological characters, allows the two groups, *Gaviidae* and *Podicipedidae*, to subsist in a single order, *Pygopodes*.

That such facts are significant, there can be no question. They have by no means escaped notice; but they have not had a sufficient or an exhaustive consideration. The Museum of Comparative Oölogy proposes for its first task the assembling of such abundant and representative material as will enable Science to work out these problems with some degree of intelligence.

We venture to hope, also, that the acquisition of really cosmopolitan material may enable us to shed some light upon the unsolved problem of the causes of variation in the eggs of the Passerine forms. We conceive this in itself to be a not unworthy task.

Besides these phylogenetic matters, a score of lesser problems, all of strictly scientific import, group themselves under the head of comparative oölogy proper. For example:

The mechanics and chemistry of pigmentation.

The effect of climate upon color—the progressive darkening of northern eggs; the reduction of spotting in desert-haunting species.

Homoplasy, or the tendency to similarity in eggs, independent of that of the parents.

Degeneration of pigment. Albinism and reversion to white, gradual or sudden. "Economy". Persistence of and reversion to primitive characters.

The range of individual, specific, and generic variation.

The relation of number and size in eggs to food-quality or abundance.

The relation of number and size to the forage radius of the parent.

The relation of bulk to precocity, or preparedness in the chick.

The effects of isolation, persecution, competition, degeneration and senescence.

"Psychological" control of the reproductive cycle.

Does the high coloring of eggs in the Passerine forms evidence a dawning esthetic interest in the parents?

These and a dozen other lines of inquiry of equal moment suggest themselves to the student of comparative oölogy. We hold it, then, to be well worth while to assemble with painstaking care material adequate for the solution of these problems. Those pseudo-scientists who affect to despise the opportunity for research offered by a comparative study of birds' eggs are simply airing their own ignorance.

But of course these problems connect themselves with a vastly wider realm of inquiry. The egg is merely the focal point about which gather the highly complicated and indubitably fascinating interests of the reproductive cycle. Although named after this focal point, it is farthest from the purpose of the Museum of Comparative Oölogy to confine itself to a study of the egg alone. The nest is of at least equal, perhaps of greater, interest. Although its phylogenetic value may be small, there is nothing else in nature so eloquent, so concretely revealing of the hidden life, of "animal psychology", as the nest of a bird. It is an epitome of history, an aspiration, of intelligence, and of all besides that goes to make up the charm of a living bird. It is to our discredit that the study of nidology has been so much neglected in America,—for no better reason, apparently, than that nests "take up a lot of room". This glaring defect in our study apparatus, the Museum of Comparative Oölogy proposes to remedy. Our plans are drafted about the central idea of providing storage space for representative nests of all the world's birds.

And here, again, our interest does not stop. Since the higher manifestations of avian activity group themselves about the reproductive cycle, or, in effect, focus upon the nest and its contents, it would be idle for us to single out the center and neglect the rest. As Terence said, *Humani nihil a me alienum puto*, we can say *Aviarum nihil a nobis alienum putamus*, for we hold that nothing which pertains to birds is foreign to our interest. The Museum of Comparative Oölogy will devote itself to the fullest exploitation of the claims of the bird. Our choice of a title, then, is a matter of emphasis and distinction rather than of exclusion. Study of the bird afield, photography, the recording of data, whether

of migration, distribution, or behavior characters,—these are just as much a part of our task as the collecting of birds' eggs. A quotation from our articles of incorporation will, I trust, make this point clear, and should justify our endeavor in the eyes of those who might otherwise be inclined to look askance:

"And we hereby certify . . . That the purposes for which it is formed are: To further the cause of ornithological science by the erection and maintainance* of a repository for natural objects, to wit, birds and their nests and eggs, and all other objects, whether natural or artificial, pertaining to or illustrating the life of birds or necessary to such illustration, and by the maintainance of a museum staff whose business it shall be to take care of the collections and to disseminate among men the knowledge of birds, their nests, and eggs; and in pursuance of this object, to . . . acquire objects of natural history, as bird skins, eggs, and nests; . . . to conduct expeditions of exploration or scientific quest; to subsidize scientific research; to publish reports, proceedings, bulletins, or journals of ornithological science; to equip and maintain a library, a lecture hall or halls, work rooms, educational classes, lecture bureaus, exhibition rooms, photographic and moving picture exhibits, and in general to do any and all things and conduct any business in any way conducive to the dissemination of the knowledge of birds, their nests and eggs, or necessary to the realization of the purpose aforementioned—the whole to be conducted for the advantage, benefit, and usufruct of the public, as from time to time determined by the Board of Trustees of said corporation, hereinafter provided for."

The key note of the new institution is coöperation. Since it is for the "public", it must of necessity be supported by the public. But the word "public" here has a varying significance. The contributing public and the benefitted public are not necessarily the same. Only the Santa Barbara public, and of those the well-to-do, are being asked to give the institution financial support. On the other hand, the outside public, the scientific public, will be invited to contribute as liberally as may be to the stocking of the Museum. For, speaking as a resident of Santa Barbara, it has been our very first thought to provide for the scientific world an institution unique of its kind, which might reasonably hope one day to stand pre-eminent in its chosen field. The pleasure and convenience of oölogical specialists will, therefore, be our first aim. Those who are conducting investigations in a serious spirit will be afforded every facility at our command for comparison and research.

A second thought has been to provide for Santa Barbara's annually increasing guests an instructive form of entertainment. How imperative this claim upon our hospitality really is, perhaps the writer knows better than most; for his doors, although at some remove from the city, and not convenient of access, have been thronged with bird-lovers from every clime and in ever increasing numbers. Indeed, it is largely because of the tax upon his modest quarters and the far too appreciative reception of his modest offerings, that this larger vision came. Those who have expressed regret that such a movement should not have been launched in a larger city, little know Santa Barbara or the weight of her responsibilities.

And of course our City expects to reap direct benefits from its new Museum through its educational features. The modern method of education is the laboratory method, and a museum is a concentrated laboratory of nature. While it cannot supplant nature, it will be no longer necessary for boys to rob birds' nests in order to satisfy their natural craving for knowledge in this realm. A centralized, socialized, and highly efficient repository of bird- and egg-material will satisfy this demand, and stimulate a dozen other wholesome interests that group themselves around it. Instead of having three hundred boys at one time collect-

*A legal term of earlier origin and supposedly "stronger" significance than **maintenance**.

ing birds' eggs, as, according to official reports, we once did have in Santa Barbara, we will have an institution which keeps for the inspection of all a representation of each species. One set of eggs, under the centralized museum plan, will do the work of three hundred sets under the old wasteful, haphazard method.

These important ends can only be secured by concerted, coöperative effort. And if Santa Barbara stands chiefly to benefit by this movement, we may urge that we are doing our full duty in providing the plant and in dedicating it to the larger use. It is for Science to realize its opportunity and privilege and to accept our hospitality, not a whit less genuine because our friends are asked to provide a part of the entertainment.

The wider coöperation of which we have spoken is to be sought in a variety of ways. In the first place, we already have an important body of well-wishers, between fifty and sixty in number, organized as a Board of Visitors. This Board will act in an advisory capacity to the new institution, and its members are pledged to further the interests of the Museum of Comparative Oölogy in any way not conflicting with their own. The names given below, then, rather represent than embody the larger scientific interest, for they are but a few of hundreds, although these are men and women eminent in ornithological science, educators, and persons of affairs, as well as special authorities upon oology, and prominent collectors, who might reasonably be expected to interest themselves in such a coöperative institution.

BOARD OF VISITORS OF THE MUSEUM OF COMPARATIVE OOLOGY

Miss Annie M. Alexander	A. B. Howell	Harry S. Swarth
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For those who because of our pleasant embarrassment of riches in the way of friends could not be elected to membership on the Board of Visitors, we have devised a careful schedule of affiliated orders which should mark the various practicable degrees of desired coöperation.

Of these an order of Fellows takes highest rank, comprising as it does those who donate or bequeath their life collections to the Museum of Comparative Oölogy, and who render her exclusivé service. Then come Patron Collectors, Field Members, and Exchange Members, each with specified obligations and privileges. In a plan so far-reaching and inclusive, it is obviously impossible to touch upon all the details in this connection.

The financial support of this institution is provided by an order of Patrons of the Museum of Comparative Oölogy, and the members of this order naturally

enjoy special and perpetual privilege. Our affairs are administered by a Board of fifteen Trustees, and we count our cause fortunate in having official sponsors who by reason of social, financial, and administrative prominence, or other special fitness for the task in hand, make up an efficient working body. These are:

BOARD OF TRUSTEES

Joel Remington Fithian, Pres.	George S. Edwards, Treas.	Fred H. Schauer
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William Leon Dawson, Sec'y.	Ednah A. Rich	Marion A. Patrick

Of these, the President, Mr. Joel Remington Fithian, deserves particular credit for having early and warmly espoused a cause in which he saw the future glory of Santa Barbara worthily reflected. The early policies of the institution were shaped by Mr. Fithian and his friends, and they are, in fact, co-founders. And if we should single out for special mention the names of E. P. Ripley, President of the Santa Fé Railway system, or George S. Edwards, President of the Commercial Bank of Santa Barbara, or Miss Ednah Rich, President of the State Normal School of Manual Arts and Home Economics, it is only to give added assurance that the Trustees of the Museum of Comparative Oölogy understand what they are about, and will see the enterprise through.

Building plans are already under discussion, although the building era is definitely deferred for three years. A commanding site with an acre of ground overlooking Santa Barbara is being selected, and upon this it is proposed to erect a closely grouped series of buildings, some twenty-two in number, of two unit types, one 22x40, the other 32x54 feet in dimensions. All construction will be of reinforced concrete, fire-and-quake-proof, with top lighting and dry heating. Besides an administration hall, a library building, a lecture hall, and work rooms, space has been estimated for the housing of a representation of 15,000 species of birds, reckoning to each bird a unit allowance of 2075 cubic inches.

For the architectural grouping and landscaping, the services of the distinguished artist, Francis T. Underhill, have been retained. The entire group of buildings with their furnishings will cost upwards of \$150,000, and the completed whole, including maintenance, endowment, and research expenditures, will require something over half a million dollars. Needless to say this is the ultimate plan, a plan whose realization may require a period of twenty-five or thirty years. The adoption of a consistent plan of unit construction imparts to the whole a greatly desired flexibility. A modest beginning will be made with one or two buildings, and the number of buildings will be increased from year to year as the requirements of accumulating specimens demand.

The immediate program of the Museum of Comparative Oölogy is a very modest one. Owing to the writer's previous engagement with The Birds of California Publishing Company, the new enterprise must accommodate itself to the old one until the task of preparing "The Birds of California" is completed. The Museum will coöperate with the publishing enterprise in prosecuting field work this coming season, although its financing and other responsibilities will be perfectly distinct. The collections now housed in the author's fire-proof studio at Los Colibris are crowding their allotment of space. A temporary building, 20x30, of corrugated iron, is being erected close to the old one, and the added space will be filled as rapidly as possible with new cases. The management pledges itself to provide adequate housing for all material sent in, and will devote itself, for the ensuing three years, not only to the accumulation of desirable material,

but to the establishment of its various lines of coöperative effort, and to the perfecting of its building plans.

If the Museum of Comparative Oölogy appears thus to be in large measure founded on faith, it is not ashamed of such appearance. Works adequate to its present needs have not been lacking locally, and we have received many pleasant assurances of outside help. We believe that we are in a position to fully reciprocate the confidence already reposed in us, and to put such contributions of nests and eggs as may be entrusted to us by the generosity of outside givers to the highest human service.

Santa Barbara, California, February 15, 1916.

NOTES ON SOME LAND BIRDS OF TILLAMOOK COUNTY, OREGON

By STANLEY G. JEWETT

TILLAMOOK COUNTY, on the northwest coast of Oregon, is a land of high, heavily timbered mountains, deep canyons, and level, grassy meadows.

There are three important bays in the county, Nehalem, Tillamook, and Netarts, and seven fair sized rivers, five of which flow into Tillamook Bay, one into Nehalem Bay, and one, the Nestucca, into a small bay of the same name. Besides these streams there are innumerable small creeks flowing directly into the ocean. Most of the county is clothed in its primeval forests of Douglas spruce. Along the immediate coast line just above the tide lands, considerable Sitka spruce is found. Most of the banks of the streams through the agricultural areas are lined with willows, alders and heavy underbrush. The fruit of such species of common native trees and shrubs as the blue elderberry, chittam (*Rhamnus*) and three species of huckleberry, form an important item in the birds' food supply during the late summer and early winter months. The heavy growth of lodge-pole pine (*Pinus contorta*) growing on the sand dunes along the beach is a great attraction to the crossbills. Most of the open country is devoted to dairying, and the broad pastures furnish good foraging for Meadowlarks, Brewer Blackbirds and Robins.

During the past three years, the Oregon Fish and Game Commission under the direction of William L. Finley, State Game Warden, has carried on systematic investigation of the bird and animal life throughout various parts of the state. The work has been carried on in Tillamook County by the writer, assisted at times by O. J. Murie, now of the Carnegie Museum staff, and by Morton E. Peck, of Salem. Alfred Shelton, of the University of Oregon, has done some work at Netarts Bay. For two reasons considerable field work has been done in Tillamook County during parts of every month in the year. First, because this part of the state presents ideal conditions for a study of the wild life in our humid coast belt, and second, because the bays and the diversified coast line make ideal collecting grounds for waterfowl. For notes on the water birds found at Netarts, Tillamook County, Oregon, see CONDOR, xvi, 1914, pp. 107-115.

Oreortyx picta picta. Mountain Quail. One of these quail was heard calling from a thicket of dwarf pine near the beach at Netarts, on April 14, 1914. They are reported as common on the hills along the east side of Tillamook Valley. They are not uncommon along the Nehalem River near Batterson Station.

Dendragapus obscurus fuliginosus. Sooty Grouse. Fairly common all over the Tillamook country, even down to the beach, where they are often heard hooting from the spruce trees during the spring and early summer. On May 10, 1913, a nest containing one egg was found in dead ferns in a pasture near Tillamook. When visited again on May 13, the broken shells of three eggs were found where some predatory animal had destroyed the nest. On June 8, 1914, one was heard hooting from a tall spruce in an open pasture near Tillamook.

Bonasa umbellus sabini. Oregon Ruffed Grouse. This grouse is not uncommon in second growth timber all over Tillamook County. During May, 1913, several were seen along the brushy banks of Wilson River, near Tillamook. On November 27, 1914, one was flushed from an old apple tree that stands near the edge of a heavy thicket on the shore of Netarts Bay. This bird apparently lived in this same locality for some time, because when I again visited the place in February, 1915, I flushed the bird from the same tree several times during the evenings. I hunted this thicket over several times, but never saw but the one bird. On February 9th when passing this tree I found a large area covered with ruffed grouse feathers where something, probably a horned owl or raccoon, had killed the grouse. No others were seen in the locality.

Columba fasciata. Band-tailed Pigeon. The pigeons arrive in Tillamook County about April 12, and become common in a few days. The latest record I have in the fall is September 10, 1913, when three were seen flying over the woods near the hotel at Netarts. Soon after these birds arrive they are found in large flocks feeding in the oat fields where they pick up the uncovered grain. There are a few complaints from the farmers, but examination of the fields where the pigeons had been feeding, showed good stands of grain. After the oats have all sprouted the pigeons feed on the buds, and later the seeds, of the chittam tree. Elderberries and huckleberries form important items of their diet during the summer. On May 4, 1913, I shot a female that contained a fully developed egg. The average weight of ten birds collected from May 1 to 10 was twelve ounces.

Cathartes aura septentrionalis. Turkey Vulture. These vultures are common during the summer months, and often are found feeding on dead sea birds along the coast. During September, 1913, five or six made their headquarters on the Netarts sandspit, where the carcass of a whale had washed up on the ocean beach.

Accipiter velox. Sharp-shinned Hawk. This little hawk is of regular occurrence all over Tillamook County. On February 8, 1915, one was shot in a grove of pine trees on the Netarts sandspit.

Accipiter cooperi. Cooper Hawk. Seen but twice, once May 13, 1913, flying over a field near Tillamook, and again on the Netarts sandspit on February 11, 1915. A. C. Shelton took one near Cape Mears on August 14, 1914.

Buteo borealis calurus. Western Red-tail. These large hawks are common the year around, and sometimes on clear warm days three or four were seen circling around over the fields in search of mice or squirrels. On February 11, 1915, one was disturbed while having a meal on a dead White-winged Scoter that had washed up on the beach.

Haliaeetus leucocephalus leucocephalus. Bald Eagle. These grand birds are of regular occurrence along the coast and bays of Tillamook County. On September 8, 1912, two were seen feeding on the carcass of a sea lion on the beach at Netarts. On April 12, 1914, I had an interesting experience with an adult of this species. I had shot a Farallon Cormorant out over the surf, and while it was coming in with the tide I walked north along the beach about half a mile. I was out of sight about thirty minutes, when, rounding a large rock, I saw an old white-headed eagle standing on the beach tearing away at my cormorant. Upon approaching to within about three hundred yards, the eagle tried to rise with the cormorant in his talons, but it proved too much for him, and after three unsuccessful attempts he flew away, before I could approach within gunshot.

On the mountain back of the Cape Mears lighthouse there is an old nest that is said to have been used for several years by a pair of these birds. When visiting it during March, 1913, no eagles were present, but under the nest, which is placed about a hundred feet up in a large Douglas spruce, we found a large assortment of bird bones among which could be identified California Murre, small grebes (*Colymbus*), cormorants, and a few bones of small ducks.

Falco peregrinus anatum. Duck Hawk. Duck Hawks are of regular occurrence

along the beach near Cape Mears and over Netarts Bay. During the winter they secure an abundance of food on Netarts Bay by catching the wounded ducks left by hunters, and in the summer by making raids on the large colonies of sea birds on Three Arch Rocks, a few hundred yards off Cape Mears.

Falco sparverius phalaena. Desert Sparrow Hawk. These little hawks are most common in the agricultural districts around Tillamook and along the Nehalem River. Specimens were secured in the fields above Netarts Bay during May, 1913.

Aluco pratincola. Barn Owl. On September 11, 1912, I saw three live Barn Owls in a cage on a farm near Tillamook, that had been captured nearby when they left their nest in a large hollow fir stump, during the previous July. The man who had them told me he had killed three or four others when he captured the ones he had in captivity. This is the only record I know of the occurrence of this owl in Tillamook County.

Strix occidentalis caurina. Northern Spotted Owl. One of these owls, a male bird, was shot April 12, 1914, in a dense spruce thicket in a deep canyon, about three hundred yards back from the ocean beach at Netarts. It came to within ten feet of me when I was squeaking to attract a pine squirrel. The owl when killed smelled strongly of skunk. It showed no signs of breeding.

Otus asio kennicotti. Kennicott Screech Owl. On December 5, 1913, O. J. Murie caught one of these owls in a trap baited with the skinned bodies of some small birds, set close to the water along Fall Creek at Netarts.

Bubo virginianus saturatus. Dusky Horned Owl. These owls are fairly common in the heavy forests of Tillamook County. During May, 1913, they were often heard hooting in the woods back of the hotel at Netarts. At Cape Lookout, during January, 1915, I saw a pair of wings cut from one that had been killed when raiding the farmer's chicken house. A specimen killed by S. G. Reed on Neahakanie Mountain, October 25, 1914, is now in our collection.

Ceryle alcyon. Belted Kingfisher. Common along the many streams in Tillamook County, and often seen along the wooded shores of the bays. A nest found in a bank along Tillamook River contained large young on May 25, 1913. This species has been recorded in November, December, and March, and is probably a regular resident.

Dryobates villosus harrisi. Harris Woodpecker. This woodpecker is common at all times in the heavy wooded sections all over the county.

Dryobates pubescens gairdneri. Gairdner Woodpecker. For some unaccountable reason this species seems to be uncommon in this section of the state. I have only one record, that of a male shot on December 5, 1913, from an alder tree on the camp ground at Netarts.

Sphyrapicus ruber notkensis. Northern Red-breasted Sapsucker. The well-known marks made by this species on fruit trees can be seen in all old orchards in Tillamook Valley. It has not been found in the immediate vicinity of the ocean beach, but is common enough inland.

Phloeotomus pileatus abieticola. Northern Pileated Woodpecker. This large woodpecker is not as common as would be expected in a country so well timbered. On May 14, 1913, one was shot in the timber back of Netarts Bay. George Russell collected one about four miles south of Tillamook on March 28, 1914. I heard the species calling in the timber on Neahakanie Mountain on August 14, 1914.

Colaptes cafer saturator. Northwestern Flicker. The flickers found in this humid coast belt are referable to this form. They average slightly darker in coloration than those from Portland, and much darker than specimens from the Willamette Valley. This species is common over the entire region and is often found feeding among the drift wood along the ocean beach.

Chordeiles virginianus hesperis. Pacific Nighthawk. Between August 13 and 16, 1914, several of these nighthawks were seen during the evenings flying about over the fields at Tillamook and Netarts.

Chaetura vauxi. Vaux Swift. This swift is a very common summer resident in the valleys of Tillamook County. I found the birds common at Batterson on the Nehalem River on August 31, 1912; during May, 1913, and June, 1914, they were common near Tillamook.

Selasphorus rufus. Rufus Hummingbird. The arrival of these hummingbirds in the spring is coincident with the blooming of the wild currant and salmon-berry bushes, usually about the middle of March. On March 10, 1913, the first one of the season was

seen. A few days later they became common. During the month of May, 1913, nine nests were found, all in spruce trees, ranging from eighteen inches to five feet from the ground. The first young to hatch was on the 5th. Fresh eggs were found as late as the 20th. Between April 10 and 17, 1914, several were seen gathering nesting material about the buildings at Netarts.

Nuttallornis borealis. Olive-sided Flycatcher. This large flycatcher is a very common resident on the hills about Netarts Bay. During May, 1914, several were seen each day. A few were seen and others heard at Tillamook during June, 1914.

Myiochanes richardsoni richardsoni. Western Wood Pewee. These birds are common in the alder groves along Wilson and Tillamook rivers during the summer. One was seen at Netarts August 31, 1912.

Empidonax difficilis difficilis. Western Flycatcher. Common in alder and willow groves throughout the entire district. One was collected on the Netarts sandspit on September 10, 1912.

Empidonax traillii traillii. Traill Flycatcher. Common in brushy pasture land during May and June.

Otocoris alpestris strigata. Streaked Horned Lark. On February 7, 1915, three of these birds were found and two collected on a small grassy field on the Netarts sandspit. The following day the third one was taken. This is the only record we have of the occurrence of this species on the coast.

Cyanocitta stelleri carbonacea. Coast Jay. These jays are very common all over the wooded section of the country. They are very conspicuous during the fall and winter, but as the nesting season approaches they become more retiring and are not often seen during June and July.

Perisoreus obscurus obscurus. Oregon Jay. Two of these birds were collected at Netarts on September 10, 1912. On December 27, 1912, and January 9, 1913, they were common in the heavy timber between Netarts and Tillamook, and a few days later several were seen near Batterson on the Nehalem River.

Corvus corax sinuatus. Raven. Ravens are of regular occurrence all over the country. They were usually found along the Netarts sandspit in winter and were common in Tillamook Valley during May, 1913.

Corvus brachyrhynchos hesperis. Western Crow. Crows are abundant in the agricultural districts through the county. During the winter months large flocks congregated on the mud flats during low tide in Tillamook, Nehalem, and Netarts bays.

Sturnella neglecta. Western Meadowlark. This beautiful songster is found the year around in the agricultural districts. Two were seen at the north end of the Netarts sandspit several times during February, 1915.

Euphagus cyanocephalus. Brewer Blackbird. Common at all times. A nest found May 15, 1913, was five feet up in a small spruce in a pasture and contained four newly hatched young.

Carpodacus purpureus californicus. California Purple Finch. Very common summer resident in the more open woods wherever I have been. They are especially noticeable during May and June when the males are in full song. On January 8, 1913, one was seen perched on the topmost twig of a small spruce on the camp ground at Netarts.

Loxia curvirostra minor. Crossbill. Crossbills are common residents in the spruce forests of Tillamook County. During September, 1912, immature birds were collected where they were feeding amongst the seaweeds along the shore of Netarts Bay. During the winter months large flocks of these birds congregate in the dwarf lodgepole pines growing on the Netarts sandspit. On July 6, 1914, several were seen at Bayocean. As a usual thing these birds are very tame and will allow one to approach within a few feet of them when they are feeding in the pines.

Astragalinus tristis salicamans. Willow Goldfinch. I found this species common in the cultivated areas around Tillamook during May, 1913, and Murie records them as common on the Netarts sandspit between September 6 and 10, 1913.

Poocetes gramineus affinis. Oregon Vesper Sparrow. A few were seen along the roadsides near Tillamook during May, 1913.

Spinus pinus. Pine Siskin. Common resident over the entire county. On April 10, 1914, they were common between Tillamook and Netarts. During September, 1912, they were common around Netarts, where they were feeding on the seeds of the Scotch thistle. On August 16, 1914, they were found in flocks along the Nehalem Beach road.

Plectrophenax nivalis nivalis. Snow Bunting. A single record. One collected by O. J. Murie on the ocean beach near Netarts on December 31, 1912. (See CONDOR, xv, 1913, p. 226.)

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. So far as I am aware there is no record of Savannah Sparrows breeding in Tillamook County, but during both fall and spring migration the species is fairly common on the salt grass flats around the bays. On April 15, 1914, one was shot where it was feeding amongst the mussels and barnacles on the rocks at Cape Mears. It was extremely fat. During the first week of September, 1912, they were common on the tide lands at the south end of Netarts Bay. I record this species under the name of "*alaudinus*" merely as a matter of convenience. The specimens from Netarts are larger than breeding birds taken in the Willamette Valley, but not large enough for *sandwichensis* which is supposed to migrate this far south. After comparison with specimens from the Sitkan district of Alaska, Mr. Grinnell says they possibly represent this race, which Swarth (Univ. Calif. Publ. Zool., 7, 1911, p. 85) provisionally refers to *savanna*.

Zonotrichia leucophrys nuttalli. Nuttall Sparrow. These sparrows are very common summer residents. They were common at Netarts from September 1 to 10, 1912, and during April and May, 1913. Several nests were found during May. A nest located in a small thimble-berry bush near the ground contained four fresh eggs on May 16. Another, four feet up in a spruce, contained five eggs on May 19.

Zonotrichia coronata. Golden-crowned Sparrow. The Golden-crowned Sparrow is a common winter resident in brushy pasture land. On May 20, 1913, a female was shot that showed no signs of breeding. On February 1, 1915, several were seen in a gooseberry thicket on the Netarts sandspit.

Spizella socialis arizonae. Western Chipping Sparrow. This little sparrow is evidently not very common. During several days in the field around Tillamook, in May, 1913, only a very few were seen.

Junco hyemalis oregonus. Oregon Junco. These Juncos are very common winter residents in the cultivated areas, feeding in flocks about the vacant lots in towns, and in gardens and dooryards throughout the country. No specimens have been taken during the breeding season, although Juncos are known to be common near Tillamook in summer. A nest found near Tillamook by O. J. Murie contained four eggs on May 10, 1913.

Melospiza melodia morphna. Rusty Song Sparrow. This sparrow is one of the most common species of Tillamook County. They are abundant in the salal thickets facing the ocean near Netarts, and during the winter months are very plentiful on the ocean beach, feeding amongst the drift wood. Several nests found during May, 1913, were placed in small spruces a few feet from the ground, and contained fresh eggs about the 10th of the month.

Melospiza melodia caurina. Yakutat Song Sparrow. On April 14, 1914, A. C. Shelton collected one of these sparrows on the rocky beach near Cape Mears, and on the following day I collected another at the same place. (See CONDOR, xvii, 1915, p. 60.)

Passerella iliaca townsendi. Townsend Fox Sparrow. A specimen taken at Netarts April 12, 1914, is referable to this form. They are fairly common in the thickets of salal and salmonberry bushes along the coast during the winter months, but none remain to breed.

Passerella iliaca sinuosa. Valdez Fox Sparrow. During the early part of January, 1913, this sparrow was very common in the underbrush around Netarts Bay. Specimens taken at Netarts on January 6 are referable to this form.

Pipilo maculatus oregonus. Oregon Towhee. This towhee is very common in the brushy pasture land about Netarts during the winter, but apparently the birds move inland during the nesting season. During May, 1913, I found them common near Tillamook, but in January, 1915, they were very scarce here, while common in the salal brush near the ocean.

Zamelodia melanocephala. Black-headed Grosbeak. A few were seen in the thick underbrush around Tillamook between May 22 and 26, 1913.

Piranga ludoviciana. Western Tanager. This tanager became very plentiful in the spruce woods near Tillamook about May 23, 1913. They were often seen catching insects in the air, flycatcher fashion.

Petrochelidon lunifrons lunifrons. Cliff Swallow. When I first went to Netarts on August 30, 1912, I saw several of these birds skimming about over the ocean beach, and

later found three old nests under the eaves of the hotel and outbuildings. During the summer of 1914 they were common all along the coast.

Hirundo erythrogastra. Barn Swallow. This species is equally as common as the last. During the summer of 1912 several pairs had their nests stuck to the wall under the porches on the hotel at Netarts. On June 8, 1914, I saw a nest placed well up to the peak against the gable end of a house in Garibaldi.

Iridoprocne bicolor. Tree Swallow. On April 10, 1914, a fair-sized flock was seen on the Tillamook River bridge on the Netarts road. On the 16th of April several were seen fluttering about cavities in dead spruce trees in an old barn near Netarts.

Tachycineta thalassina lepida. Northern Violet-green Swallow. Very common around buildings in Tillamook during May, 1913. The first ones arrived at Netarts on March 10, 1913, and soon after that date they became common.

Bombycilla cedrorum. Cedar Waxwing. O. J. Murie reports a small flock of these birds on the camp ground at Netarts during the first week of September, 1913. On August 14, 1914, I saw several catching flies over a small lake near Nehalem.

Vireosylva gilva swainsoni. Western Warbling Vireo. This species is not as common as might be expected. One was taken in a second growth spruce thicket at Netarts on May 17, 1913, and another was seen in the alders along Tillamook River on May 25.

Lanivireo solitarius cassini. Cassin Vireo. This species is fairly common in the timbered sections of the county. On June 8, 1914, several were seen on the hills back of Garibaldi. They were common near Tillamook during May, 1913.

Vireo huttoni obscurus. Anthony Vireo. The only records we have of this species are of specimens taken during the winter or early spring months. Two were secured in the spruce woods back of Netarts on March 12, 1913. One was secured in the timber on Cape Lookout on February 9, 1915.

Vermivora celata lutescens. Lutescent Warbler. This is one of the characteristic summer birds of the brushy creek banks and sparsely wooded pasture lands. They are usually found in deciduous woods, but sometimes are seen feeding high up in spruce trees. Two nests were located. One, May 11, 1913, at Tillamook, was on the ground in a heavy growth of moss, and contained four incubated eggs when found. A nest containing four fresh eggs was found, well concealed by a mass of dead ferns, in a rather open pasture at Netarts on May 14. On April 10, 1914, I found these warblers common in the alder and willow thickets near Netarts.

Dendroica aestiva brewsteri. California Yellow Warbler. A few were seen in the alders and willows along Trask and Wilson rivers during May, 1913.

Dendroica auduboni auduboni. Audubon Warbler. A common species during the early spring and summer. They frequent the spruce and pine woods near the ocean beach in great numbers during the month of May. A specimen was taken and others seen near Netarts on January 4, 1914.

Dendroica townsendi. Townsend Warbler. During May, 1913, this species was often heard singing high up in the spruce trees near Tillamook. An adult male was seen in a spruce tree at Tillamook on May 10. Two more were seen in the spruce forest at Netarts on May 17.

Dendroica occidentalis. Hermit Warbler. I found this species not uncommon in the spruce forests near Tillamook, during May, 1913. They were first seen on May 10, and later became common. On May 24 a male and female were seen in a grove of tall, second-growth spruces. This pair showed every evidence of breeding. A single individual of this species was seen at Nehalem on August 16, 1914.

Oporornis tolmiei. Macgillivray Warbler. A few were seen in the thick undergrowth along the streams near Tillamook during May, 1913.

Geothlypis trichas arizela. Pacific Yellowthroat. Fairly common in all suitable places throughout the county. A pair seen in a small marsh near Tillamook on May 17, 1913, were evidently nesting at the time.

Wilsonia pusilla chryseola. Golden Pileolated Warbler. These warblers are very common summer residents all over the county. On September 1, 1912, they were very common at Netarts, but they had all migrated by the 10th. I found them plentiful at Tillamook during May, 1913, and at Garibaldi in June, 1914.

Anthus rubescens. Pipit. A specimen was secured by O. J. Murie during a snow-storm on January 6, 1913, at Netarts. I found a small flock wintering on the Netarts sandspit during January and February, 1915.

Cinclus mexicanus unicolor. Dipper. Common resident on all the larger streams in the county. A specimen was secured on Short Beach Creek, near the ocean beach, on December 6, 1913.

Salpinctes obsoletus obsoletus. Rock Wren. A specimen was collected by O. J. Murie on December 27, 1912. It was on some drift logs on the beach near Netarts. (See CONDOR, xv, 1913, p. 226.)

Thryomanes bewicki calophonus. Seattle Wren. This wren is a common resident in open woods and brushy pasture land all over the county.

Nannus hiemalis pacificus. Western Winter Wren. Ever present in the heavy forests, where the cheery song of the birds can be heard at all times of the year. During January, 1913, this species was found commonly feeding amongst the driftwood along the ocean beach.

Sitta canadensis. Red-breasted Nuthatch. I found this species common in the dwarf lodgepole pine thickets on the Netarts sandspit during January and February, 1915. They travel in flocks, usually in company with chickadees and kinglets.

Penthestes atricapillus occidentalis. Oregon Chickadee. This species is common in the mixed woods about Tillamook and farther inland. It has not been found in the immediate vicinity of the coast line.

Penthestes rufescens rufescens. Chestnut-backed Chickadee. This chickadee is one of the most common birds found in the heavy woods along the coast. Found in large flocks during the winter months.

Chamaea fasciata phaea. Coast Wren-tit. This species frequents the immediate vicinity of the coast, and is never found far inland. The birds are very common on the hills fronting the ocean beach, where they live in the impenetrable tangle of salal, huckleberry, and salmon-berry bushes.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. This is a very common resident all over the timbered sections of the county. During the winter the birds congregate in large flocks, and feed mostly in spruce and pine woods. A nest was found in a large spruce tree on May 17, 1913, by watching the birds carrying nesting material to it. The nest was well hidden in the drooping twigs near the end of a large limb, about twenty feet from the trunk of the tree, and about twenty-two feet from the ground. On May 20, the nest contained one egg. The outer walls of the nest were made of green moss, closely matted together and interwoven with fine spruce twigs. The interior was lined with fine downy materials.

Regulus calendula grinnelli. Sitka Kinglet. This kinglet is a common winter visitant, but unlike the Golden-crowned, feeds more in deciduous trees and shrubs, and does not congregate in flocks, although two or three are often found with flocks of chickadees, Golden-crowned Kinglets, and nuthatches. They were found common from December to March, less common in April, and not seen during May or later in the summer.

Hylocichla ustulata ustulata. Russet-backed Thrush. A specimen in fresh fall plumage was taken at Netarts on September 7, 1912. They were found common at Tillamook during May, 1913. Several were seen at Garibaldi on June 8, 1914.

Hylocichla guttata guttata. Alaska Hermit Thrush. A very common winter resident along the coast. They were found plentiful at Netarts during December, 1912. Several were taken near Cape Lookout during the first week of February, 1915. None have been seen between the months of April and September.

Planesticus migratorius propinquus. Western Robin. Robins are plentiful all over the cultivated areas. During May, 1913, several nests were found near Tillamook. On May 17 the first young out of the nest were seen. On January 5, 1913, several were seen feeding in the fields near Netarts. On February 12, 1915, they were common near Netarts and at Tillamook.

Ixoreus naevius naevius. Varied Thrush. This species is a very common winter resident, and a few remain throughout the year. I saw several in the heavy timber back of Bar View beach on May 22, 1913, and several were heard singing near Garibaldi during the early morning of June 8, 1914. They were common at Netarts on September 10, 1913, and again on April 16, 1914.

Sialia mexicana occidentalis. Western Bluebird. A common summer resident, and a few are found during the winter. A pair was taken near Cape Lookout on January 30, 1915. Several were seen in a burned over forest area near Netarts on April 12, 1914.

Portland, Oregon, November 25, 1915.

FROM FIELD AND STUDY

A Note on the Food of the Western Robin.—In front of the Biological Station building at Flathead Lake, Montana, a small spring seeps into the lake, making a damp spot in the sand of the lake shore. Here, in the month of July swarms of butterflies congregate to drink. The butterflies are principally of two species, *Papilio rutulus*, a large yellow and black one, and *Papilio eurymedon*, an equally large one in cream color and black. These butterflies became so absorbed in their drinking that they could be easily approached and sometimes picked up in the fingers. One day, I was much amused to notice that a Robin (*Planesticus migratorius propinquus*) took advantage of this and found them a ready source of food supply. The bird would approach and watch until one fluttered its wings, and then would seize it and swallow it wings and all. I watched it for some time, and noticed that the yellow butterflies were the only ones eaten, although the others outnumbered them almost three to one. Whether the brighter color attracted the bird to these, or the others were distasteful, cannot be said with certainty, but I believe the former to be the case. A chipmunk, which also fed on these butterflies, caught and ate both species, carrying them to the shelter of a log, where it discarded the wings, leaving them in a large heap.—ARETAS A. SAUNDERS, *New Haven, Connecticut*.

Slight Extension of Range of San Diego Titmouse.—On December 19, 1915, at least two San Diego Titmice (*Baeolophus inornatus murinus*) were noted with a flock of Bush-tits (presumably *Psaltiriparus minimus minimus*) among the junipers on the high mesa at the south edge of the Mohave Desert, the exact spot being approximately five miles south and four miles west of Hesperia, San Bernardino County, California. The mesa at this place is about 3800 feet altitude and less than a mile farther south drops off abruptly into Cajon Pass, through which there would be no physical barriers to the localities on the other (south) side of the western portion of the San Bernardino Range, regularly inhabited by this subspecies. The junipers end a half mile north of this record, where typical Lower Sonoran vegetation immediately replaces it. One of the two birds was taken, an adult female (no. 4587 coll. J. E. Law) and has been pronounced "*murinus*" by J. Grinnell after comparison with the series of both "*inornatus*" and "*murinus*" in the California Museum of Vertebrate Zoology.

The weather was at this time, and had been recently, entirely normal, clear warm days and crisp frosty nights, and the birds seemed to be very much at home, as were the bush-tits. Flocks of the latter and at least one "*murinus*" were observed on the 20th. Unfortunately no bush-tits were collected, for this is near the recorded desert limit of its range as well.—J. EUGENE LAW, *Hollywood, California*.

Nature of the Occurrence of the Rose-breasted Grosbeak in Humboldt County, California.—It would appear from Pacific Coast Avifauna no. 11 (p. 135) that the Rose-breasted Grosbeak (*Zamelodia ludoviciana*) continues to be known from California upon but very scanty basis. Since the undersigned was concerned in the first one of the three known instances of occurrence, it may be of interest to present additional details.

On July 1, 1897, our party found this Grosbeak so abundant in the orchard at Myer's, Humboldt County, California, as to be a pest. The people on the ranch made a business of shooting the birds to keep them from eating all the fruit. Males and females were present and were seen by us, and, as elsewhere recorded, specimens were saved. Can it be doubted that they were breeding that summer and that a considerable colony was present in that region? While it may be true that the species is a "sporadic visitant" in California, it would seem certain that, in the year in question, either a flock of considerable size had gone astray and reached the Myer's ranch or that we had to deal with a colony of several years' standing.—C. H. GILBERT, *Stanford University, California*.

Additional Notes on the Birds of Kootenai County, Idaho.—

Marila valisineria. Canvas-back Duck. Rare fall visitant. A young male, found with its neck broken, floating in Lake Coeur d'Alene near a boat house, March 10, 1915, may have struck piling or a building in the dark, causing the accident. Reports that Canvas-back Ducks have been taken on the lake for several years past have come to my notice, but this is the only specimen I have examined.

Canachites franklini. Franklin Grouse. Not common resident of the heavily timbered sections. An adult female examined October 10, 1915.

Aquila chrysaetos. Golden Eagle. Rare. An adult male examined, taken October 11, 1915.

Otus asio macfarlandi. Macfarlane Screech Owl. Rare resident. A specimen in the gray phase examined January 18, 1916. It was taken in a pigeon coop within the city limits, having forced its way into the coop and killed and partly devoured a pigeon when taken.

Regulus calendula. Ruby-crowned Kinglet. Common in spring in fir thickets. Probably resident. Specimen taken April 20, 1915.

On December 9, 1915, I was surprised to hear faint notes of the Bluebird (*Sialia mexicana occidentalis*?) and discovered three individuals flying rather low over the housetops. Later I was told that three Bluebirds had spent two days, December 10 and 11, in and about a bird house in a pine tree in this city not far from where I had noticed them flying overhead. The weather being not far from zero, and with deep snow, this struck me as being an unusual record for Bluebirds in this vicinity.

During the extreme cold weather and deep snow prevailing from January 1 to 20 of this year, many small owls, particularly the Saw-whet (*Cryptoglaux acadicus*) and Screech Owls, took refuge in barns and outbuildings, and were attacking pigeons and chickens. In one instance a Saw-whet had killed and partly eaten a bantam chicken.—HENRY J. RUST, *Coeur d'Alene, Idaho*.

Plumage of the Young Male Red-shafted Flicker.—Near the Biological Station at Flat-head Lake, Montana, I found last summer a nest of the Red-shafted Flicker (*Colaptes cafer collaris*) containing six well grown young. In the process of banding these young, I noticed that one of the birds was already equipped with the red mustache marks, the feathers then just breaking the sheaths. In all the books in which I have searched for information on this subject the statement is made that young flickers lack the mustaches. This observation, however, indicates that in some individuals the young male has this mark, even in the nestling plumage.—ARETAS A. SAUNDERS, *New Haven, Connecticut*.

Concerning Vernacular Names of *Passer domesticus*.—In looking over THE CONDOR of January, 1916, I notice, in treating of a publication by Ernest Harold Baynes, that the reviewer, among other things, says: "The English Sparrow, or European Sparrow as Mr. Baynes calls it, apparently has no terrors for the author;" etc., etc. This brought back to me the thought that has often occurred to me before, why this unwelcome alien should be so persistently known as the "English" Sparrow. If the bird was originally brought over from England, one would not consider the name unfair, but England is a small spot on the map of Europe, and who knows from what country it was really introduced into North America?

I have found no record as to this; Chapman, in his "Handbook", states that it was "first introduced into the United States at Brooklyn, N. Y., in 1851 and 1852"; but from what country and by whom is not stated. I believe that I am not alone in the opinion that "House Sparrow" or "European Sparrow" would be far better, and more correct.—H. H. MITCHELL, *Provincial Museum, Regina, Saskatchewan, Canada*.

Auburn Canyon Wren: An Objection.—Having often thought over just the point brought up by Dawson in the last CONDOR, page 33, I would like to offer a few opinions of my own; all in a most friendly spirit of discussion.

I do not believe that vernacular names should be governed by as strict rules of priority as are the scientific names, for it is well to have a loop-hole through which to crawl in case of a serious error, or, as in the case of the "Louisiana" Tanager, when subsequent alterations of political boundaries make the old name too misleading. I approve of the change to the name of Western Tanager, and I think it high time that some of the other misleading geographical names of birds were changed.

The case of *Catherpes m. punctulatus* is a different matter, however. The bird is dotted, although this character is not as noticeable as the prevailing color, of course. Uniformity in all things is desirable, and especially so in scientific matters. If we alter one English name to another that is slightly more appropriate, the whole *A. O. U. Check List* should be gone through and revised. Dotted Canyon Wren is no more offensive to

the discriminating mind and eye than is Dwarf Hermit Thrush, Summer Tanager and a hundred others in our avifauna, but I imagine there are few who would advise such sweeping changes.

By all means, let all who wish, call *Oceanodroma homochroa*, Coues Petrel, or call *Catherpes m. punctulatus*, Ridgway Canyon Wren. That is entirely permissible, but why not be uniform and call the birds either after the describer, or as those gentlemen intended they should be named.

Another thing to which I should like to call attention, and which I deplore, is the practice often followed by some men I know (and mighty good friends I consider them too) of calling birds by nicknames. For instance, a short time ago I was privileged to see some truly remarkable photographs of birds, the "names" of which were written on the backs. That of a flock of Black-crowned Night Herons was labelled "Squawks"; one of Black-bellied Plovers was "Grey Plovers"; Western Sandpipers was "Sand Peeps", and several others similarly. These names may be very expressive, and, if a man has a fair ornithological education, they will be understood, but the majority of the copies of these photos will probably fall into the hands of people whose knowledge of birds is limited. It is most important that the little which the lay public knows about birds, shall be correct. While a very small youngster, and just starting to collect single, end-blown eggs with the help (?) of a couple of popular bird books, I can clearly remember what difficulty I had in trying to distinguish between the Kingbird, as given in one book, and the Bee Martin in the other. I have never since forgiven the author of the latter.—A. B. HOWELL, *Tucson, Arizona*.

A New Fly Trap.—The English Sparrow (*Passer domesticus*) is by far the most abundant bird in the cities of Imperial Valley, outnumbering all other birds (in the city districts) about ten to one. I have noticed them on several occasions congregated around store fronts early in the mornings while the air was still very cold. Close observation showed that the birds were industriously making hearty breakfasts of the flies which had settled on the store fronts the warm evening before, and were now benumbed with the cold. The supply of flies seemed inexhaustible but these imported fly traps must have eaten enormous quantities. I have seen the flies so thick that they could be brushed up by the quart. If the supply of English Sparrows in Imperial Valley can be increased sufficiently the fly question in that section ought to be solved, for flies, like English Sparrows, seem to thrive around our smaller cities and towns.—W. LEE CHAMBERS, *Eagle Rock, California*.

Mexican Ground Dove at San Diego.—A male Mexican Ground Dove (*Chaemepelia passerina pallescens*) was shot inside the city limits of San Diego on November 10, 1915, by H. G. Keith of this city. The bird is now in the collection of the San Diego Natural History Society.—HENRY GREY, *San Diego, California*.

An Early Record of American Scoter for California.—In sorting over an old box of bones here, I found the head, wing bones and feet of a bird, bearing the following data: 44931, *Oidemia americana*, ♀, San Luis Obispo, Cal., Spring, 1866, W. F. Schwartz. On the back of the label, in Baird's handwriting, is the statement: "First spec. fr. Pacific Coast. Keep." I do not know whether this information has any particular significance, since it appears Baird had recorded the species from Fort Steilacoom in his report of 1858, but it occurred to me this might be the first record for California and therefore of possible general interest.—CHAS. W. RICHMOND, *Assistant Curator, Division of Birds, U. S. National Museum, Washington, D. C.*

Mexican Ground Dove, Western Grasshopper Sparrow, and California Cuckoo at Escondido, San Diego County, California.—During the spring and summer of 1915 several species of birds were observed at Escondido, California (elevation 750 feet), which have not been found there commonly before; their appearance seems worthy of recording. It might be stated here that the rainfall during the spring of 1915 was excessive, which resulted in an *extended* as well as good growth of vegetation so that such birds as the Cuckoo and Ground Dove might have been led to wander farther than usual from their regular range.

The first stranger was noted April 13, 1915, by Charles Schnack who found what he thought was the nest of a Savannah Sparrow; but not being sure of the species asked me to come with him prepared to collect the bird on the nest if need be. The species proved to be the Western Grasshopper Sparrow (*Ammodramus savannarum bimaculatus*). The nest was located in an extensive, alkaline, salt-grass meadow. It was placed beside a clump of salt grass which originally covered the nest, in part, at least, shielding the brooding female from the more nearly vertical rays of the sun. The nest cavity seemed to have been scratched out, and the nest was very thin on the bottom so that the back of the brooding female on the nest was almost flush with the surface of the ground.

When we approached the nest the female flattened out on the nest and watched us anxiously. She flushed when we were about six feet away and after we had stood still for several seconds conversing in whispers upon the color pattern of the back and the lack of a decided yellow streak over the eye. The bird slipped off the nest with no trace of commotion, and ran, or rather sneaked away, using every available tuft of grass as a screen to hide behind. When she reached a little ridge about twenty feet away she hopped up in plain sight, and took a flying hop to another ridge a few feet farther away. To a passer-by she would appear to have flushed from a point some twenty feet away from the nest. Mr. Schnack observed the bird when she left the nest several times, and he said that this was her characteristic way of leaving it. The male could be heard uttering a faint insect-like *chip* from some clod or small ridge nearby, but he was very shy and kept circling the nest at a distance.

The nest was built entirely of fine dead weed stalks loosely pressed together. I have been able to identify some of the stalks as of wild oat and salt grass, but the majority are not identifiable. It was well lined with fine dry grass and grass-seed heads frizzled out, there being no feathers, fur or other animal matter.

The outside dimensions of the nest were, horizontally, 125 mm. (5½ inches) by 113 mm. (5 inches), with a depth of 43 mm. (2¼ inches). The inner cavity measured 69 mm. (3¼ inches) by 63 mm. (3 inches), with a depth of 30 mm. (1¼ inches).

Incubation was from one-third to one-half completed in the four eggs, on April 14. The egg-shells have a ground color almost white with only a suggestion of blue. The individual markings on the eggs average about a square millimeter in area and are arranged in a band from three to five millimeters wide around the more central part of the egg. The position of this band is much nearer to the center of the egg than it is to the large end. This seems to be a good distinguishing character for the eggs of the Grasshopper Sparrow. The under-shell markings are a pale violet-plumbeous, while the brighter surface spots are about hazel. One egg has been cracked in transit and the others measure in millimeters as follows: 18.3x15.7; 18.8x14.6; 17.5x14.7.

The female bird was secured as she left the nest and is now no. 25866 in the collection of the California Museum of Vertebrate Zoology. The male and eggs with nest were secured also, the male being no. 25865, while the nest with eggs is numbered 1617.

A female Savannah Sparrow (in migration of course) was secured within a few feet of the nest of the Grasshopper Sparrow. Several other pairs of Grasshopper Sparrows were seen or heard in this one salt grass patch, but their presence was certainly outside the regular order of things as none had been observed about this place during the fifteen or twenty years previous to this date.

On June 29, 1915, a male Mexican Ground Dove (*Chaemepelia passerina palleescens*) in full breeding plumage and actions was observed by my brother, J. B. Dixon. This bird frequented a stretch of marshy, willow-grown river bottom about three miles north of town. His intense cooing attracted attention, and he is now no. 25862 in the California Museum of Vertebrate Zoology.

June 30, 1915, revealed the first California Cuckoo (*Coccyzus americanus occidentalis*) that we had observed in San Diego County. This was a female which was mistaken for a small hawk as it dashed through a willow thicket where there were young chickens. The cuckoo call had been heard several days previously to this, and the specimen (now no. 25863, Mus. Vert. Zool.), had the bare flabby abdomen of a brooding bird. Another (male?) bird was heard a few days later and several weeks later immature Cuckoos were seen and heard calling in the willows.—JOSEPH DIXON, Berkeley, California.

Ring-necked Duck near Corona, Riverside County, California.—While shooting on the grounds of the Pomona Recreation Club near Corona, Riverside County, California, on December 12, 1915, I flushed a strange duck from the tules. The bird was taken and proved to be a female Ring-necked Duck (*Marila collaris*). As there are few published records of this bird from southern California I thought this worthy of note. The bird is now in my collection.—WRIGHT M. PIERCE, *Claremont, California*.

Odd Performance of a Flicker with a Malformed Bill.—Attracted to an upstairs window in the early morning of January 18, 1916, by the apparent nearness of a woodpecker's drumming, I found a Red-shafted Flicker (*Colaptes cafer collaris*) resting within five feet of my eyes, on a square galvanized iron drain, which extended down from the extending eaves to the house wall, at an angle of twelve or fifteen degrees. I was much surprised to note that its lower mandible curved gradually downward from the base and had grown nearly if not quite an inch longer than the upper mandible, which seemed perfectly straight and normal. At first, assuming that this bird had done the drumming, I concluded that this obvious deformity must be its tongue, for some reason kept extended. The bird's position, however, was such that it was silhouetted against the sky and it shortly satisfied that point by unmistakably extending and moving its real tongue.

But, to cap the climax, it turned its head to the left and drummed, turning it far enough so that a line between the points of the two mandibles would be at right angles to the axis of the body, in which position the lower mandible was out of the way and the upper free to drum. And drum it did, not once, but time and again with long pauses between, always turning its head with crown to the left. In the drumming its whole body vibrated, so much so that it literally rattled down the drainpipe backward a little each time it drummed.

As the sky was heavily overcast, I was unable to make out its sex. But it strikes me as notable that in spite of its deformity it had maintained itself in good enough condition and spirits to sense the mating instincts, of which drumming is undoubtedly one. Not only that, but it heads the spring procession, as the first drumming for 1916, heard on one of our drains January 12, was probably by this same bird: Rather earlier in the season than we are accustomed to expect it, though for a month or so each early spring our resonant metal work is a favorite sounding board for flickers at unreasonably early hours.—J. EUGENE LAW, *Hollywood, California*.

The Old-squaw in West-central California.—On November 21, 1915, an Old-squaw (*Harelda hyemalis*) was taken by Master James M. Moffitt on the Suisun Marshes, Solano County. A careful examination of the bird in-the-flesh left no doubt in my mind as to its identity.—JOHN W. MAILLIARD, *San Francisco, California*.

Additions and Changes to the Summer Birds of Flathead Lake, Montana.—Work during the summer of 1915 at the Biological Station at Flathead Lake has resulted in several additional species, and some changes in the identifications of others. With the new species I have included two found by Mr. Silloway, the records of which have never been published. The new species are as follows:

Hydrochelidon nigra surinamensis. Black Tern. While waiting at Somers for a boat to take me to Yellow Bay, I saw a pair of these birds flying over a small slough that was overgrown with rushes and cat-tails. From the actions of the birds when I approached the slough, I believe they were breeding, but since I was still travelling and not dressed for wading in a marsh I was unable to investigate.

Spatula clypeata. Shoveller. I saw a single bird of this species on the Pend-Oreille River near Polson, July 27.

Phalaenoptilus nuttalli nuttalli. Poorwill. This bird was heard calling in the hills back of Polson on the evening of July 26.

Archilochus alexandri. Black-chinned Hummingbird. Mr. Silloway has seen this bird in the vicinity of Yellow Bay, but the date of this occurrence is not given.

Empidonax hammondi. Hammond Flycatcher. Observations this season have shown that this flycatcher is not uncommon in the forests about Flathead Lake. It was first noted June 24, on a mountain slope back of Yellow Bay. A specimen was secured on Wild Horse Island, July 2. A nest was found near the station at Yellow Bay, June

26. This nest was saddled on the horizontal limb of a tamarack at a height of about twenty-five feet. It was observed frequently from the day it was found until the young flew late in July.

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. First noted near Somers on June 23. Later found to be fairly common in the vicinity of Polson. Specimens were secured at Polson Swamp, July 12, and at Polson, July 27. These birds were examined by L. B. Bishop, who states that they are evidently not typical of any race. The first is a bird in juvenal plumage, and is nearest to *nevadensis*. The second, an adult, is more like *alaudinus*.

Vermivora rubricapilla gutturalis. Calaveras Warbler. There is a specimen of this bird in the collection of the University of Montana, taken by Mr. Silloway at Yellow Bay, August 6, 1912. This is evidently the first record of the species in Montana.

Penthestes rufescens rufescens. Chestnut-backed Chickadee. I found this bird fairly common in the forests near Yellow Bay, in flocks in company with the Long-tailed Chickadee. It was seen frequently, and a specimen secured on June 30..

Changes in identification and other notes follow.

Bonasa umbellus togata. Canada Ruffed Grouse. The bird occurring in this region has previously been recorded as *B. u. umbelloides*. If it is true that *umbelloides* always has a gray tail, then many of the birds of this region must belong to *togata*, for examination of specimens in the University of Montana collection, as well as observations in the field, show many birds with reddish-brown tails and the heavily marked under parts of *togata*. In the L. B. Bishop collection are a number of specimens of this bird from Columbia Falls, a point about twenty-five miles north of Flathead Lake. Some of them are referable to one form and some to the other, yet none of them show enough difference to warrant the assumption that there are two forms found in this region. I believe that the differences are entirely those of individual variation, but what to call the form in this region is a puzzle.

Picoides americanus fasciatus. Alaska Three-toed Woodpecker. An adult male, secured July 1, at Yellow Bay, was identified by L. B. Bishop as of this race. My observations in the field also go to show that this is the regular breeding race in this region, instead of *P. a. dorsalis*, the birds showing much less white on the back than do those of southern Montana.

Junco hyemalis montanus. Montana Junco. A male bird, secured at Wild Horse Island, July 2, proved to belong to this race, and not to *J. h. connectens*, the race originally attributed to this region.

Melospiza melodia merrilli. Merrill Song Sparrow. A specimen secured at Polson Swamp, July 12, was identified as of this race rather than *M. m. montana*. *Merrilli* is probably the regular breeding bird of the region.

Ammodramus savannarum bimaculatus. Western Grasshopper Sparrow. A nest of this bird, containing four eggs in an advanced state of incubation, was found at Polson, July 27. Since I know of no other definite record of the finding of a nest of this species in Montana, though the bird's occurrence in summer has been noted frequently, I wish to publish this record here.—ARETAS A. SAUNDERS, *New Haven, Connecticut*.

Nesting of the Western Bluebird at Ventura, California.—On June 14, 1915, a pair of Western Bluebirds (*Sialia mexicana occidentalis*) were observed feeding their young in a crevice under the cornice of one of the office buildings in Ventura.—RALPH ARNOLD and J. R. PEMBERTON, *Los Angeles, California*.

The Belted Kingfisher Wintering in Fresno County.—Sufficient evidence has accumulated to warrant the statement that *Ceryle alcyon* winters sparingly in the Fresno district. January 11, 1913, a single individual was seen to fly from his perch on Skagg's Bridge, on the San Joaquin River. January 18, 1913, another was noted on a willow tree over a small creek at the edge of the hills north of Sanger. December 24, 1915, a Kingfisher flew across the road near a small canal at Firebaugh. January 26, 1916, one was noted on a telephone wire near Oxalis, and I was informed that at least two had been present all through the winter. The above records would seem to indicate a slight extension of the range as given in Pacific Coast Avifauna no. 11, page 76.—JOHN G. TYLER, *Fresno, California*.

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EDITORIAL NOTES AND NEWS

We believe our readers will find the announcement of Mr. Dawson's new museum project of especial interest not only because of friendship for Mr. Dawson himself and sympathy with any undertaking he may inaugurate, but because of the many poignant suggestions he makes as to the intrinsic value of careful study of birds' eggs and nests. We heartily agree with Mr. Dawson in his vigorous defense of the scientific value of the groundwork in oology upon which important research may be based. There is no doubt whatsoever but that the study of birds' eggs may be made to yield very much larger returns than any that have so far been secured.

An institution of the sort projected by Mr. Dawson, with rigid adherence to the *highest standards of scientific accuracy* in both field work and curatorial methods, could not fail to be a wonderfully effective instrument in the development of American ornithology. Doubtless all Cooper Club members will join us in extending well wishes for the successful accomplishment of the undertaking.

The annual Cooper Club Business Managers' report for 1915 as recently presented to the Club divisions by Messrs. Chambers and Law shows a very gratifying condition of finances. The total receipts for the year amounted to \$1581.43, from the following sources: Dues \$894.85; Condor subscriptions \$186.08; advertising \$22.96; sale of back Condors \$57.54; sale of Avifaunas \$205.00; life memberships \$215.00. Expenditures were as follows: Printing of Condor \$618.53; half-tone cuts \$127.38; payments on Avifauna account \$631.39; Editorial expenses \$17.50; Managerial expenses \$255.80; Division expenses \$56.61; purchase of back numbers of Condor \$8.00. On January 2, 1915, cash in bank was \$221.86; on January 1, 1916, \$88.08. As usual at all times there are some bills due to be paid on both Avifauna and Condor accounts, not more in amount, however, than the Managers consider wholly proper. The publication of Avifaunas is considered to be in the nature of an investment upon which through sales at least five per cent per annum may be confidently expected.

THE CONDOR for 1915 contained 252 pages and 78 illustrations, and 1100 copies of each issue were printed. Pacific Coast Avifauna No. 11 was issued in October, with 217 pages and three maps, and the edition was 1500. The Club's membership on January 1, 1916, numbered 561.

We have before us the February, 1916, number of *Bird-Lore*. In perusing the "Sixteenth Christmas Census," which occupies a large share of this issue, we are led to offer the following comments. These comments are based primarily upon those censuses emanating from California, with which area we happen to be best acquainted. In scrutinizing certain of these, we cannot help but seriously doubt the identifications alleged in quite a number of instances; and the question arises as to the real function of the type of census here put on published record. Do they constitute dependable records of species, which can be drawn from in studies of geographic distribution and migration? Or are they merely the informal output of amateurs, to be considered only as of passing interest, as a sort of incitant to popular activity in bird study?

Undoubtedly, on the latter score, the appearance in print of neighborhood bird lists has a stimulating effect; people like the competitive idea. If this is all that is intended, well and good; and let it be understood that the censuses are not subject to inclusion in ornithological bibliographies, and are not to be cited in any part as distributional evidence.

But shall we thus, from the scientific standpoint, condemn altogether the census idea as exemplified in *Bird-Lore's* sixteenth exhibit? Is it not possible to com-

bine the two functions above outlined, by the strict elimination of such censuses as emanate from the obviously untrained observer, or at least of the names of those species of doubtful occurrence in the localities concerned from such lists as are published? True, this would require a high grade of editing; but if the first function above indicated is to be served at all, such expert editorial service must be performed unflinchingly.

Shall *Bird-Lore's* censuses be accepted in the future as contributions to ornithology?

As already announced in these columns, the California Fish and Game Commission about two years ago established a Bureau of Education under the directorship of Mr. Harold C. Bryant who had been previously connected with the California Museum of Vertebrate Zoology. This departure from the purely police function of the Commission was undertaken in the belief that an enlightened public sentiment might go far toward securing popular recognition of the need for game protection and thus eventually do away with the necessity for maintaining a large force of wardens. There seems to be no doubt whatsoever today but that the plan is going to succeed, and Mr. Bryant is to be highly commended for his earnest efforts in developing the idea.

One of the instruments for reaching the people of the state has been the periodical called *California Fish and Game*. Volume I of this journal has lately been completed. There were five numbers in this volume, the first issued in October, 1914, and there were 261 pages and 58 illustrations. The departments regularly appearing were: General articles; editorials; hatchery and fishery notes; conservation in other states; life history notes; wild life in relation to agriculture.

The general articles of particular note pertained to the following subjects: Recent game legislation; crude oil, a trap for birds; bird life as a community asset; the Wood Duck in California; books and pamphlets relating to California birds; the California Valley Quail; and early nesting of ducks.

As may be inferred from the above list of subjects there is much of real scientific value included in the columns of *California Fish and Game*. The editor has, and properly so, taken pains to select only authentic contributions for publication. The danger with any periodical in a popular field is that it will become the vehicle for more or less imaginative, or hearsay tales. Very little criticism can be offered on this score and it is to be hoped that even more rigid censorship will be exercised in future volumes.

The following are some of the sentiments we find expressed editorially on different pages, and with which we most heartily

concur. "The effectiveness of game protection is governed by the interest of the people and the spirit of those who hunt and fish." "Proper knowledge on the subject of game preservation is not yet possessed by the people as a whole in any western state." "The recognition of scientific truths combined with a practical knowledge of the working of correct laws are essential things in game administration."

INFORMATION WANTED FOR THE "LIFE HISTORIES OF NORTH AMERICAN BIRDS"

COURTSHIP: Of Mexican Grebe; any of the Loons (except Red-throated); any of the Alcidae; any of the Longipennes (except Kittiwake, Herring, Ring-billed, Heermann or Ross gulls; Gull-billed, Royal and Sooty terns; Noddy, and Black Skimmer); any of the Fulmars, Shearwaters and Petrels; any of the Steganopodes (except Gannet, Anhinga, Cormorant, and Double-crested Cormorant); Florida and Mottled ducks; and Gadwall.

NESTING HABITS: Of Whiskered Auklet; Marbled Murrelet; Kumlien and Nelson gulls; Slender-billed Fulmar; Greater, New Zealand and Pink-footed shearwaters; and White-bellied Petrel.

FEEDING HABITS: Of Mexican Grebe; Pacific Loon; Craveri Murrelet; Red-legged Kittiwake; Kumlien, Nelson, Slaty-backed and Vega gulls; Elegant, Aleutian and Bridled terns; Yellow-nosed Albatross; Pink-footed, Audubon, Townsend and New Zealand shearwaters; Black, Scaled, Least, Kaeding, Guadalupe and Hawaiian petrels; Cinnamon Teal; and Florida and Mottled ducks.

VOCAL POWERS: Of Rhinoceros Auklet; Whiskered Auklet; Kittlitz Murrelet; Mandt Guillemot; Red-legged Kittiwake; Kumlien, Nelson, Slaty-backed, and Vega gulls; Elegant and Bridled terns; Pacific and Slender-billed fulmars; Cory, Pink-footed and New Zealand shearwaters; Black-capped, Scaled, Guadalupe and Socorro petrels; Red-faced Cormorant; Florida and Mottled ducks; and Cinnamon Teal.

WINTER HABITS: Of Kittlitz Murrelet; Long-tailed Jaeger; Red-legged Kittiwake; Nelson, Slaty-backed, Vega and Franklin gulls; Elegant, Aleutian and Bridled terns; and Noddy.—A. C. BENT, *Taunton, Massachusetts*.

PUBLICATIONS REVIEWED

NATURAL HISTORY OF HAWAII, Being an Account of the Hawaiian People, the Geology and Geography of the Islands, and the Native and Introduced Plants and Animals of the Group. By WILLIAM ALANSON BRYAN, B. Sc., Professor of Zoölogy and Geology in

the College of Hawaii, etc. Honolulu, Hawaii. The Hawaiian Gazette Co., Ltd. 1915. 596 pp., 117 plates. (\$5.50 net.)

A "natural history" of Hawaii has long been a desideratum. Every year the numbers increase of those who seek our Pacific play-ground for health and recreation. Prof. Bryan has prepared an extensive handbook, interestingly written and admirably illustrated, covering a really wide range of subjects. The preface states that it has been the aim of the author to bring together into one volume the more important and interesting facts about the Hawaiian Islands and their primitive inhabitants, as well as information concerning the native and introduced plants and animals of the group. "To supply a guide that would provide reliable and readable information, in a form that would be welcomed by the general reading public, and, at the same time, that would meet the requirements of the homes, the schools, and the libraries of Hawaii and the mainland, as a convenient reference book, has been the author's endeavor."

"The casual reader will find the body of the text shorn of the technical verbiage and scientific names that so often distract, annoy and fatigue the layman. Where such terms have been indispensable they have been defined in the text, the footnotes, or in the index and glossary. Those who prefer their reading should rest on the firmer ground that definite nomenclature is supposed to impart, will find the necessary technical names of orders, families, genera and species, referred to in the text given in the footnotes, or in the cross-references in the index."

The book comprises an account of the native Hawaiian people; the geology, geography, and topography of the islands; the flora of the group; agriculture and horticulture; and a treatise on the animal life, occupying some seventeen chapters out of a total of thirty-seven. Chapters 22 to 25 are devoted to ornithology, the subject having been treated under the following subheads: Introduced Birds; Birds of the Sea; Birds of the Marsh, Stream and Shore; Birds of the Mountain Forests.

Unquestionably the most interesting birds of the main islands are those belonging to the Drepanididae which includes the majority of song birds of Hawaii, and "is perhaps the most remarkable example of the evolution of a group of birds to be found anywhere. While they are much alike in their general structure, they differ amazingly in the form of the bill and also exhibit striking differences in the color of the plumage.

In almost all other families the form of the bill is quite uniform among the species that belong to it. But among the Drepanididae of Hawaii we find them fitted by their structure to almost every kind of life for which a song bird in the tropics can become adapted. This adaptation of the bill has led to some most remarkable changes. From the firm, straight bill of the genus *Oreomystis*—the genus supposed to most closely conform with the ancestral form which may have come from America in very remote time, and the form from which all the other genera of the family are supposed to have evolved—we have widely different types of bills developed." One line of modification ends in a long, slender, and singularly curved bill with a tubular tongue, especially adapted to securing the nectar from long tubular flowers. Another terminates in *Chloridops kona*—a grosbeak-like bird that feeds on the flint-hard seeds of the bastard sandal-wood.

Unfortunately these queer, musky, anomalies are paying the penalty of extreme specialization. Confined, as many of them are, to very special foods, they are unable to meet the radically changed conditions incident to deforestation. Of a total of fifty-six living and extinct passerine birds which have been known to exist in the forests of the inhabited islands of the group, sixteen are now regarded as definitely extinct, while in the last decade other species have become very rare in districts where they were regarded as fairly common. Probably it is only a question of a short time before all but the least specialized will disappear.

One hundred and seventeen half-tone plates illustrate the work. The figures of the birds are mostly from the plates of Wilson and Evans's *Aves Hawaiienses*. Almost all the other plates of the book are from photographs direct from nature, or from prepared specimens. A very full, often annotated, index completes the work and renders easily accessible its extensive store of information. The text and illustrations, it may be added, are clearly and well printed, on good dull-finished paper.

The author is to be congratulated for producing a work which will give pleasure to many, undoubtedly stimulate interest, and long remain a standard reference work on the natural history of Hawaii.—W. K. FISHER.

BIRDS IN THEIR ECONOMIC RELATION TO MAN, by RICHARD C. MCGREGOR (Ornithologist, Bureau of Science, Manila, P. I.). [Philippine Bureau of Science, press bulletin.

tin no. 32, revised. Issued December 29, 1915.]

Evidence of awakened interest in the economic value of birds has just come to us from the most distant of Uncle Sam's possessions, the Philippine Islands. Within the fourteen pages of the bulletin named above, and appearing under the authorship of a former Californian and pioneer member of the Cooper Ornithological Club, is to be found proof that interest is turning more and more toward the economic aspect of ornithology. The introduction asserts that the greatest value of birds is to be found in their "efficient control of weeds, snakes, small mammals such as rats and mice, and insects that eat and destroy plants and trees." The inclusion of snakes as pests to be destroyed would hardly find a place in a similar work in the United States, a point suggesting the marked difference in conditions existing in the temperate zone and in the tropics. The introduction further points out that the purpose of the bulletin is to suggest how the value of birds may be recognized, and the more important benefits be derived, through popular appreciation of wild birds and an increased interest in them. A short resume of the work done by the United States Biological Survey is followed by a discussion of certain groups of birds whose food habits make them of interest to the Philippine agriculturist. Only general statements as to the probable nature of the food are given. The one bird considered of no use "about a farm house or cocoanut grove" is the crow.

The following recommendations as means to the end sought are advanced: The attracting of birds by means of food, water, and nesting boxes; the destruction of natural enemies such as cats; the protection of insectivorous birds from gunners and trappers; and the formation of a society, similar to the Audubon Society, for the protection of birds. The keeping of poultry is also recommended as a means of controlling locusts.

If the bulletin had been intended as a contribution to knowledge it would have been of little significance; for it is largely a collection of general facts regarding the relation of birds to agriculture gleaned from economic papers published elsewhere, and is lacking in definite data as to local conditions. The evident fact that the paper was designed purely to arouse interest in the subject of economic ornithology among the inhabitants of the Philippine Islands

places it in a different and wholly favorable light. It should also be noted that this bulletin is preliminary to definite work on the food of Philippine birds along the lines of that carried on by the United States Biological Survey.—HAROLD C. BRYANT.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

DECEMBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, California, Thursday evening, December 16, 1915, at 8 p. m. President Joseph Mailliard was in the chair with the following members present: Mesdames Allen, Grinnell and Schlisinger, Misses Culver and Wythe, and Messrs. Bryant, Bolander, Carriger, Evermann, Hubbs, Storer and Taylor. Among the visitors were Mrs. Taylor and Messrs. Ferris and Martens.

The minutes of the Northern Division November meeting were read and approved and the minutes of the Southern Division and Inter-Mountain Chapter for November were read. The following were elected to membership: H. W. Daniels, Mrs. Sophie E. Gay, and Mrs. Adele Lewis Grant. The following proposals for membership were read: Miss Edna A. Hannibal, R. F. D. no. 1, San Jose, proposed by J. O. Snyder; Harold E. Hansen, 870 43d Ave., San Francisco, proposed by Tracy I. Storer; and Curtis Wright, Jr., 6436 Benvenue Ave., Berkeley, proposed by H. C. Bryant. Also the names proposed at the Southern Division November meeting were read.

The Secretary read a letter from Mr. Henry W. Henshaw, Chief of the United States Bureau of Biological Survey, thanking the Club for its recent action in electing him to honorary membership.

Nominations for officers of the Division for the coming year resulted as follows: President, Tracy I. Storer; Vice-president, H. W. Carriger; Secretary, Mrs. A. S. Allen.

H. C. Bryant, as Game Expert of the California Fish and Game Commission, stated that the Commission was considering the placing of the American and Snowy egrets on the list of prohibited birds mentioned in collectors' licenses and stated that the Commission would appreciate any recommendations which the Club might make along this line. After some discussion it was decided upon motion by Mr. Bryant to have the

President appoint a committee of three to consider the matter, and that this committee would be permitted to make recommendations to the Commission without first reporting to the Division. The committee comprises: W. P. Taylor, chairman, J. Grinnell, and T. I. Storer.

Business being disposed of, the Division listened to a talk by Mr. Joseph Grinnell on "The Distributional Behavior of Some Birds in the Yosemite Region". The speaker brought out the complementary nature of the ranges of a number of groups of Fringillidae and then displayed a series of lantern slides showing photographs of various birds of the Yosemite region. Adjourned.—TRACY I. STORER, *Secretary*.

JANUARY.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, California, January 20, 1916, at 8 p. m. President Joseph Mailliard was in the chair with the following members present: Mesdames Allen, Grinnell, Klugel and Schlisinger, the Misses Atterbury, Culver, Gunn, Swezy and Wythe, and Messrs. Bryant, Carriger, Daniels, Dixon, Grinnell, H. E. Hansen, Kendall, Newberry, Storer, W. P. Taylor, Wheeler, and Wright. Mesdames Dixon, Newberry and Stone were among the visitors present.

The minutes of the December, 1915, Northern Division meeting were read and approved, and those of the Southern Division and Inter-mountain Chapter were read. The following were elected to membership: Miss Edna A. Hannibal, Harold E. Hansen, Curtis Wright, Jr., and seven persons proposed at the Southern Division in November, 1915. Applications for membership were received as follows: Miss Alice F. Crane, 314 Cherry St., San Francisco, and Miss Augusta H. Blanchard, 246 Perry St., Oakland, both proposed by Miss Susan B. Culver; Mrs. Charles S. Newhall, 2629 Piedmont Ave., Berkeley, proposed by Mrs. Jas. T. Allen; also six applications received at the Southern Division December 1915 meeting.

Resignations were read and accepted from L. R. Kessing and Miss Louise LeBris. Dr. Walter P. Taylor presented his resignation as Chairman of the Permanent Committee on Conservation of Wild Life and as Cooper Club representative on the Executive Committee of the California Associated Societies for the Conservation of Wild Life, to date from February 20. The resignation was accepted.

The Secretary read part of a letter from Mr. Chambers urging all Club members to participate in an attempt to increase the membership roll. The special committee appointed at the December meeting reported that it has recommended to the California Fish and Game Commission that in the interests of conservation scientific collectors be denied the privilege of collecting the American and Snowy Egrets. Mr. Joseph Grinnell was nominated for Editor of THE CONDOR during 1916, and Messrs. W. Lee Chambers and J. Eugene Law as Business Managers. On motion by Mr. Wright it was declared the sense of those present that the Division should meet in San Francisco in the near future.

Election of officers resulted as follows: President, Tracy I. Storer; Vice-President, H. W. Carriger; Secretary, Mrs. Jas. T. Allen.

The program of the evening was then presented. Mr. W. C. Newberry gave an interesting account of the "Nesting Habits of the Wren-tit", based upon intensive observations made in Berkeley during April, 1915. Mr. R. S. Wheeler gave an interesting account of "Oological Collecting Experiences on the Gila River in April, 1915", and showed a number of slides illustrative of the region visited. Adjourned.—TRACY I. STORER, *Secretary*.

FEBRUARY.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, California, February 17, 1916, at 8 p. m. President Tracy I. Storer was in the chair, with the following members present: Mesdames Allen, Ferguson, Grant, Grinnell, Kluegel, Schlisinger; Misses Crane, Culver, Gunn, Miller, Wythe; Messrs. Anderson, Bade, Bolander, Carriger, Evermann, Grinnell, Hansen, Lastreto, Joseph Mailliard, Ohl, Rankin, Ray, Swarth and Wright. Mrs. Anderson, Miss Davidson, Mr. Jacobsen, Mrs. Swarth, Miss Newlon, Mr. Schlisinger and Mr. Snow were among the visitors present.

The minutes of the January, 1916, Northern Division meeting were read and approved. The following were elected to membership: Miss Alice F. Crane, Miss Augusta Blanchard, Mrs. Charles S. Newhall, and six persons proposed at the Southern Division meeting in December, 1915. Mrs. Nellie C. Knappen, 2844 Webster St., Berkeley, was proposed for membership by Mrs. J. T. Allen.

A report of the finances of the Club, rendered by the business managers, Messrs. Chambers and Law, was read by Mr. Grinnell. The report was accepted and placed on file, and on motion of Mr. Mailliard a committee of two was appointed by the President to draw up a resolution expressing the Division's appreciation of the efficient and self-sacrificing services of Messrs. Chambers and Law in conducting the business of the Club. Mr. Mailliard and Dr. W. F. Bade were appointed on this committee.

The President announced that at the request of the other two officers of the Division he had assumed the work which Dr. Taylor had been obliged to give up in resigning from his position as Chairman of the Permanent Committee on Conservation of Wild Life and as Cooper Club representative on the Executive Committee of the California Associated Societies for the Conservation of Wild Life.

By unanimous vote of the Club, Mr. Grinnell was re-elected Editor of THE CONDOR, and Messrs. Chambers and Law as Business Managers.

The business of the evening having been disposed of, Mr. Mailliard presented a very interesting account of the "Gulls at the Panama-Pacific International Exposition", illustrated by skins and by a large number of lantern slides, which showed the increasing tameness of the different species, and their surprising attitudes as caught by the camera.

Dr. Bade reported that two Mockingbirds had been seen repeatedly during the winter in Berkeley. Adjourned.—AMELIA S. ALLEN, *Secretary*.

INTER-MOUNTAIN CHAPTER

DECEMBER.—The Inter-Mountain Chapter of the Cooper Ornithological Club, met at Salt Lake City, Utah, December 14, 1915, at the residence of A. O. Treganza. Meeting called to order at 8:30 p. m., Vice-President J. A. Mullen presiding, and the following members in attendance: A. D. Boyle, Mr. and Mrs. J. A. Mullen, J. Sugden, Jr., J. Sugden, Sr., Mr. and Mrs. A. O. Treganza. Minutes of November meeting read and approved.

The evening was spent in a study of local breeding shore birds, and looking over the Treganza series of oological specimens of this family. Meeting adjourned at 11:00 p. m.—MRS. A. O. TREGANZA, *Secretary*.

JANUARY.—The Inter-Mountain Chapter

of the Cooper Ornithological Club, met at Salt Lake City, Utah, January 11, 1916, in the office of Dr. D. Moore Lindsay, Boston Building. Meeting called to order at 8:30 p. m., with President Chambers in the chair. Minutes of the December meeting read and approved. Members in attendance were: Prof. J. H. Paul, A. D. Boyle, J. Sugden, Jr. and Sr., Mr. and Mrs. J. A. Mullen, Mr. and Mrs. A. O. Treganza, Fred W. Chambers, Dr. D. Moore Lindsay.

The business of the evening consisted in voting a change of meeting night, as the second Tuesday of the month made it impossible for many of the members to be present. Motion made by J. A. Mullen, seconded A. D. Boyle, that meeting night be changed to the second Wednesday of the month. Passed.

President Chambers gave a very interesting talk on game sanctuaries he was endeavoring to create; also summarizing work that had been done in those already established.

Professor J. H. Paul spoke of his projected plans presented to the school board broadening the scope of bird study in the public schools.

Mrs. A. O. Treganza read a poem "The Sage Thrasher", by R. H. Palmer of Pocatello, Idaho.

President Chambers extended an invitation to the club to visit his fish hatcheries in the immediate future. Meeting adjourned at 10:15 p. m.—MRS. A. O. TREGANZA, *Secretary*.

FEBRUARY.—The Inter-Mountain Chapter of the Cooper Ornithological Club, met at Salt Lake City, Utah, February 9, 1916, at the residence of J. Sugden. Meeting assembled at 8:30 p. m., with Vice-President Mullen in the chair. Members in attendance were: Dr. D. Moore Lindsay, J. Sugden, J. Sugden, Jr., Prof. J. H. Paul, Mr. and Mrs. A. O. Treganza, A. D. Boyle, J. A. Mullen; visitors were Miss Jeremy and Mrs. A. D. Boyle. Minutes of the January meeting read and approved.

A most enjoyable evening was spent in looking over the entomological and oological collections of Mr. Sugden and his son, listening to their highly interesting account of the metamorphoses of insect life, and explanations of many tropical and foreign species. Later the members adjourned to the dining room where Mrs. Sugden had provided a most delightful luncheon. Adjourned 11:30 p. m.—MRS. A. O. TREGANZA, *Secretary*.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge.

Notices of over ten lines will be charged for at the rate of ten cents per line. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

FOR EXCHANGE—Very fine skins of Michigan waders and warblers for western or desirable sets.—J. CLAIRE WOOD, 179 17th Street, Detroit, Mich.

WANTED—Skins of Flammulated and Dwarf Screech owls in exchange for northern material such as Queen Charlotte Island Jay, Northwestern Sawwhet Owl, Richardson Grouse, Hepburn Leucosticte, Bohemian Waxwing, etc.—J. A. MUNRO, *Okanagan Landing, British Columbia, Canada*.

WANTED—A1 sets of the following, nests with smaller kinds and down with ducks: A. O. U. nos. 17, 113.1, 114, 135, 142, 143, 151, 165, 249, 292a, 340, 399, 424, 439, 573, 574, 622c, 623, 626, 634, 646b, 682, 713a, 726b, 759a, 759d, and many others. I can offer in exchange rare A1 sets from the northwest and elsewhere.—J. HOOPER BOWLES, *The Woodstock, Tacoma, Wash.*

TO EXCHANGE—For bird skins not at present represented in my collection: *Coues Key to N. A. Birds*; *Ridgway's Manual of N. A. Birds*; U. S. Executive Document No. 91, *Explorations from Mississippi River to Pacific Coast, 1853-1856, Birds*, by Spencer F. Baird, 995 pages.

Over 50 odd copies of ornithological magazines to exchange as a lot for last four issues of *The Auk*. Viz: 15 copies *Oologist*, Vol. 7 to 13; 15 copies *Osprey*, Vol. 1 to 2; 11 copies *Nidologist*, Vol. 3 to 4; 10 copies *Museum*, Vol. 1 to 2.—GEO. G. CANTWELL, *Puyallup, Wash.*

WANTED—Loomis's *California Water Birds* No. IV, for which I will pay any reasonable cash price.—W. E. CLYDE TODD, *Carnegie Museum, Pittsburgh, Pa.*

WANTED—Bird Lore, vols. 1, 2, 3, 10, whole volumes or odd copies. Also vol. 7, no. 1; vol. 9, nos. 3-6; vol. 11, no. 5; vol. 14, nos. 1-2; vol. 15, nos. 2-6. *The Auk*, vols. 1 to 10.—J. N. SWIFT, *Stockport, Ohio*.

WANTED—*Ridgway's Manual of North American Birds*. Will pay cash.—FRIEDA LUEDEMANN, *Box 105, Los Gatos, Calif.*

BLUE-BIRD—Published in co-operation with The Cleveland Bird-Lovers' Association, and devoted to *Bird Study and Conservation*; \$1.00 a year; 10 cents a copy; *Agents Wanted*. Address EDITOR BLUE-BIRD, 1010 Euclid Avenue, Cleveland, Ohio.

WANTED.—Good photos of any and all birds found in California, their nests, eggs, and nesting sites. Will pay cash or give good exchange in bird skins.—EDWARD WALL, *San Bernardino, California*.

WANTED.—Bird skins from the Western U. S. in exchange for Eastern skins. Kindly send list of duplicates and you will receive my list by return mail.—J. A. WEBER, *Box 327, Palisades Park, New Jersey*.

WANTED.—*American Museum Journal*, of New York: vol. V, nos. 2 and 3; vol. VI, no. 1; vol. VII, no. 3; vol. VIII, nos. 8 and index; vol. X, nos. 6 and 7; vol. XI, no. 2; vol. XII, no. 1. Guide Leaflets to same: nos. 9, 17, 18, 21, 23, 25, 27, 30. *Zoological Soc. Bulletins*, New York: nos. 1, 6, 8, 35, 43, 46.—CHAS. O. TROWBRIDGE, *Framingham Center, Massachusetts*.

WANTED.—Loomis's "California Water Birds" number V; "The Blue Bird," vol. 6, nos. 1 and 2, published at Cincinnati, Ohio, by Dr. Eugene Swope; *Bulletin of the Cooper Ornithological Club*, vol. I, any odd nos.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

WANTED—A good cabinet for bird skins. Anyone having one for sale or exchange, please write to—R. T. KELLOGG, *Silver City, New Mexico*.

BOOKS WANTED—Loomis' "California Water Birds," part v. Will pay any reasonable price for a copy of this.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

I WANT one copy each of "The Blue Bird", vol. 6, nos. 1 and 2, published at Cincinnati, Ohio; edited by Dr. Eugene Swope.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

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THE **C**ONDOR

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Volume XVIII

May-June, 1916

Number 3



W.K.P.

COOPER ORNITHOLOGICAL CLUB

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MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month; or on the Tuesday evening preceding, when the last Thursday falls on a holiday. Take south-bound car from town; on Spring Street, the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

NORTHERN DIVISION: At the Museum of Vertebrate Zoology, University of California, Berkeley. Time of meeting, 8 P. M., the third Thursday of every month. Take any train or car to University Campus. The Museum of Vertebrate Zoology is a large corrugated iron building situated on the south side of the campus immediately north of the football bleachers.



THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVIII

May-June, 1916

Number 3

THE SHADOW-BOXING OF PIPILO

By DONALD R. DICKEY

WITH FIVE PHOTOGRAPHS BY THE AUTHOR

EVIDENCE of the pugnacious instinct which the approach of the mating season brings to the males of most of our birds and mammals is always interesting. Take the moose for example. For half a year Nature bends her energies toward the antler development of the bull, and then, in apparently wanton forgetfulness of the task accomplished, limits the use of his horns to the transient season of mating and of combat. Short as that season is, it nevertheless furnishes one of the most striking examples of the height to which this pugnacious intolerance of rivals can rise.

Time after time I have come on deep-pawed holes and trampled horn-scarred brush where two New Brunswick bulls had met, and, in the vernacular of the North Woods, "sassed each other" with deep-toned grunt and clash of antlers on surrounding brush. Sometimes wads of blood-matted hair bore mute testimony to the fact that bluff alone had not sufficed to dispose of the weaker contestant, and that mortal combat had been resorted to. However commonplace the sight of such a wilderness ringside may come to be, one can never escape a thrill on finding such a spot. In imagination the two great, heavy-weight champions again stand challenging each other, with horns stripped of their velvet, and burnished for the fray, and with coats in all their early fall gloss, like the oiled gladiators of old.

Unfortunately in these cases we can do no more than call on our imagination, for these are generally fights in the dark, and the eyes of very few men have witnessed them. Luckily, however, we do not need to live a wilderness life to find some evidence of the warring of males at the approach of the mating season. Restrict yourself to the birds alone, and, even in the heart of New York City, you can see that rough and tumble of the English Sparrow ragamuffins in the gutter, which heralds the approach of spring. The more fortunate Californian sees frequently the aerial melée of two Western Mockers as they



Fig. 29. No bird lends itself better than the ANTHONY TOWHEE to quiet, patient photography when away from its nest. The individual in the picture hopped closer and closer to the blind where I was concealed, with all the curiosity of a WREN-TIT. Strange as it seems in so phlegmatic a bird, however, I have found it hopelessly shy when confronted at its nest with a camera.

fall head over heels from a palm tree to the ground in their trial for mastery.

Our interest in these encounters is partly the natural human zest for any well matched test of strength; partly it is because they accompany, in the case of beast and bird, the annual climax of their horn development and habit-interest, and of their plumage and song. But for the nature student there is a deeper significance in all this, since it is the foundation of that basic law of selection, which probably influences the development of a race more than any other one thing, if we except the food problem and untoward climatic condition.

The fundamental quality of this instinct is my only excuse for calling attention to its freakish and amusing manifestation in the shadow-boxing of the Anthony Towhee (*Pipilo crissalis senicula*). The males of this species will come, in the breeding season, to a window pane where a good reflection of themselves is to be had, and fight with their mirrored and supposititious rival for hour upon hour. I have seen this with such frequency as to preclude the hypothesis of isolated individual vagary, and while, as I say, it is a small matter in itself, it nevertheless shows, as well as the mortal combat of the moose, the length to which this pugnacious instinct can carry a creature.

For dogged persistence and violence I have no case to compare in interest with the following experience of General Penney, of Nordhoff, California. He is one of those fortunate men who campaigned in the early days with Dr. Coues, so his observations have added interest and assurance of accuracy. In the late winter of 1913-1914, when the mating season had as yet hardly begun, one of these Anthony Towhees began coming every morning at nine or ten o'clock to a certain window of the living room of the General's Ojai Valley home. At this hour the interior of the room was comparatively dark, and, in contrast to the bright light outside, created a very fair mirrored backing for the window pane. Perching on the sill, the bird would eye his reflection, and then set systematically to work to kill that supposed rival, with all the ire and intolerance of a rutting moose. The tactics varied somewhat, but on the whole, the bird firmly believed that victory lay in the frequency of his attacks, rather than in their violence, so that the blows of his beak rained on the pane with all the persistence of water dripping on a tin porch roof after an Eastern thaw. Each blow was, of course, met squarely by the shadowed beak of his opponent; each retreat was mimicked by the shadow; each unusually furious onslaught was countered in equal force. Sometimes they rested as though by mutual consent—the bird and his sparring partner—but presently some turn of the bird's head would find an answering challenge in the glass, and he would fly at it again. Hour after hour this continued, until the bird was completely exhausted, or until the light changed and the reflection vanished.

This continued day after day and week after week with scarcely an interruption, and became a positive nuisance. As time went on and his attacks netted him nothing, *Pipilo* worked himself into greater and greater frenzy until blood specks from his beak often covered the lower part of the pane. The smaller head feathers, loosened in the fracas, would stick to these blood spots and necessitate frequent window washing, in addition to the "damnable iteration" of his tap, tap, tapping at the pane. Nothing was done about it, however, and it continued as an almost daily performance until early summer. Then, with the close of the breeding season, the bird stopped of his own accord.

One can imagine a bird fighting its reflection for a moment on first dis-



Fig. 30. THE INTERLACED FLOWER STEMS AND WEED STALKS USED BY THIS ANTHONY TOW-
HEE FORMED A NEST WHICH WAS SO STRIKINGLY HANDSOME AS TO BE QUITE UNIQUE, IN
MY EXPERIENCE, WITH THIS SPECIES.

covering it, but that instinct should be strong enough to bring it day after day for so protracted a time, is beyond comprehension. It, of course, never occurred to us that the experience would be repeated. Imagine every one's surprise, then, to have an Anthony Towhee show up bright and early one morning at the same pane in the early spring of 1915. He went immediately to work attacking the reflection with all the vigor of his recouped forces; for chance points to its being the same bird. Remembering the aggravations of the year before, General Penney tacked mosquito netting over the lower half of the pane, but the bird was not to be so easily discouraged. Next morning he was fighting as busily as ever, having merely transferred his interest and perch to the upper, or uncovered, portion of the window.

Next the netting was tacked over the whole frame, but almost immediately

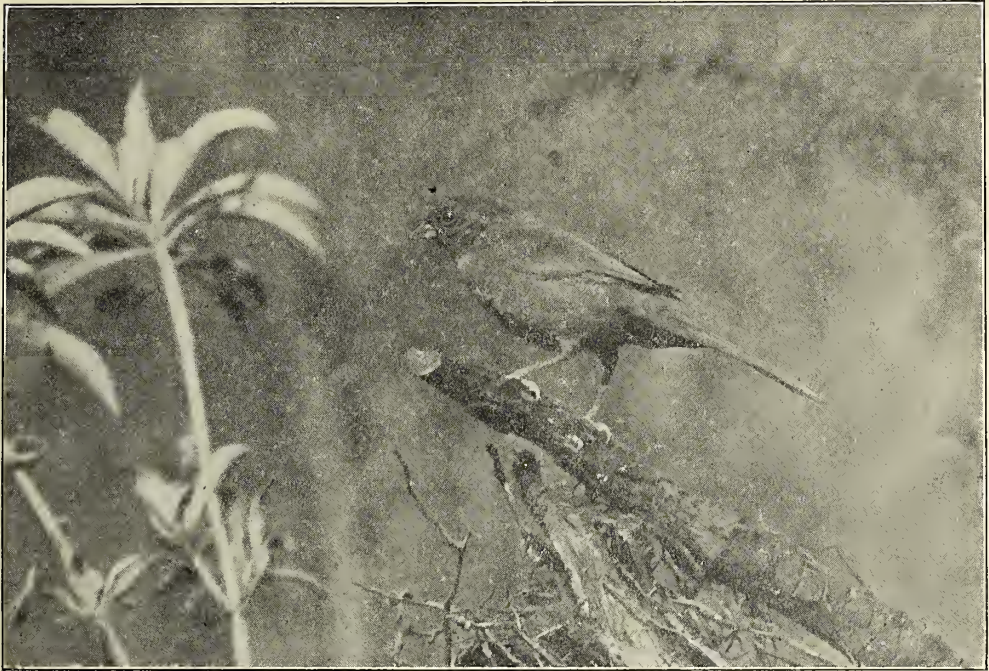


Fig. 31. BETWEEN BOUTS AT THE GARAGE WINDOW THIS BIRD BOSSED OUR FEEDING STATION ABSOLUTELY.

the bird peeked a hole through the netting in his savage search for that enemy. In spite of the cramped quarters between the netting and the glass, the bird made himself as objectionable as before, so as a last resort a wire screen was substituted for the netting. This proved entirely effective from the first. Pipilo recognized defeat and went his way. After a month or so, therefore, the screen was removed, but within two days he was back on the job. Next morning the screen was back on the window, and there it stayed until July of last year, when it was removed with impunity because of the passing of the nesting season.

This spring for the third consecutive year a bird returned to the same spot with the same intent, but the cure had at last been found. The screen was

immediately applied, and now the General smokes his after-breakfast cigar in peace and comfort.

This is, as I say, the most persistent bird of which I have record, but several other cases have come under observation. For two years an Anthony Towhee has started the same performance on my own garage window in Pasadena, but in these instances the bird was less determined, and within a week or so abandoned the attempt of his own accord. In the same way individuals have formed the habit at the Pierpont Cottages, in the Ojai. There have been at least three different cases since 1911, when I have happened to be there, but these birds, also, gave up the attempt after a comparatively short trial. On two other occasions friends have told me of birds which had an obsession for "getting into a certain room of their house". On investigation these also proved to be Anthony Towhees, which had not the slightest burglarious intent,



Fig. 32. SCRATCHING ABOUT AMONG THE DRY GRASS STEMS AND DEAD LEAVES AFTER THE FASHION OF HIS *MACULATUS* KINDRED.

but were merely employed in this strange phase of rival conquest.

The habit is not entirely restricted to Towhees, since I have seen two instances of California Linnets attempting the same thing. That even our Western Mocker is sometimes tricked into this same waste of time and strength seems certain from the statement of Mr. Sylvanus Tyler, of Pasadena. His interest in birds for many years makes him an accurate observer, and he assures me that a Western Mocker attacked a window across the street from his home with tremendous fury and daily persistence one spring. It was finally found dead under the window, and as there was no mark on the bird, death was presumably caused by the continued shock of the glass upon its beak.

The habit appears so much more common, however, with Pipilo, that one is justified in taking him as the exemplification of this strange perversion of

the strongest of the secondary sex instincts. As I say, it is of interest only when one realizes its cause, and sees the lengths to which it is carried, but I, for one, cannot now resist watching Pipilo with interest and commiseration



Fig. 33. A CHARACTERISTIC NEST OF THE ANTHONY TOWHEE IN A SAGE THICKET.

whenever I discover him thrusting and countering with his Phantom Rival of the Pane.

Nordhoff, California, April 9, 1916.

A POPULOUS SHORE

By FLORENCE MERRIAM BAILEY

WIDE MARSHES and their lagoons, separated by commanding sand dunes from a broad sandy beach stretching out of sight down the Pacific, afforded ideal natural conditions for migrating water birds, and their abundance was attested by sign posts just below Venice, marking the preserves of one of the gun clubs of southern California. Up the shore the low Santa Monica Mountains could be seen, very ordinary mountains in the strong revealing light of day, but in the glamour of purple haze standing rich and reserved, and, behind a veil of mist, coming under the spell of mystery and magic.

At sunset the low slanting light illuminated their cliffs and any ships that might be lying at anchor off the long pier of Port Los Angeles, as well as the rigging of the boats lying at anchor in the harbor of Venice, where flocks of Gulls gathered, flying about the pier and the sky above; and one night the light touched up a party of Cormorants sitting statuesquely erect on the edges of a row boat. Then a faint rainbow arched up in the southeast, and soon after, the Gulls disappeared for the night.

Farallon Cormorants were often seen in the canals of Venice, a resort built in imitation of the Italian city, and fortunately for me temporarily unpopular at the time of my visit, October, 1907. As I looked down from a bridge over one of the canals one day, a Cormorant dived and swam about close under it. A ragged boy with a raft pointed to the smelts that were swimming around. The Cormorants—"Hell Divers," he called them—"have caught onto it now," he explained; "there are more fish in the canals than along shore, and no swells." When one of the big birds came close up to his raft he was much pleased. "One thing funny," he said, "they get up on the bank and hold their wings out to dry." In the swimming pool one of the birds was diving for small water snakes. When he came up holding one, he worried with it for some time, the snake squirming around his bill refusing to be swallowed. When it went down at last in passing it made a big lump in his throat and he wriggled as if it were still squirming. But then he dived and that was the conclusion of the matter—as far as onlookers were concerned. A stand in the middle of the pool marked Deep Water was a favorite Cormorant perch, the birds frequently being seen there preening their feathers and drying their wings, the orange pouches at the base of their bills showing well. When one was on the bank of a canal oiling his feathers one day, a Kingfisher sat watching him as if wondering what manner of bird he might be, but having business of his own soon flew off to a stake out in the marsh.

Now and then a stray Duck or a Dabchick was seen on the canals. If a Dabchick, one moment it would be sitting quietly on the water, the next a series of quivering rings would mark the spot where it had disappeared. One of the exquisite Eared Grebes, as handsome and distinguished as the Dabchick is homely and plebeian, appeared one day, with arching neck and charmingly pretty ways, swimming gracefully about and diving with airy ease. As I watched it, its color pattern seemed like that of many other birds well fitted for recognition by those who know it and for protection from those who do not, for the gleaming white cheeks, seen from afar, may well disserve the

black head from the bird's body, while the black line down the back of the neck may also serve a double purpose.

But, though a few interesting birds were to be seen on the canals of the town, the throngs of Gulls and waders gathered at low tide on the ocean beach, flying over from the lagoons in the marshes where they apparently stayed during high tide. An interesting spectacle they presented as you looked down the shore line—myriad large and small forms including Godwits, Willets, Surf-birds, Gulls, and Sandpipers, running out after the waves and hurrying back before them, back and forth, back and forth, like children afraid of getting caught by the waves. Until the hunting season opened the birds were remarkably tame, so tame that afternoons at low tide they would walk along the shore ahead of me, and if disturbed by a heedless walker would merely circle out over the surf, cross the sunpath, and curve in to light a little farther down the beach.

In these assemblages the Gulls were the largest birds, and next to them came the brown Marbled Godwits standing on long legs with long bills down before them, most interesting birds in appearance and habits. One afternoon there must have been from a hundred and fifty to two hundred of them feeding along a mile of shore line. With them were a few gray Willets, looking much smaller as well as shorter billed, perhaps half a dozen in all, a few Surf-birds, and possibly two dozen Gulls, including the Ring-billed, Bonaparte, and the Western. Some of the Godwits were evidently young of the year, being smaller and lighter colored, and having shorter bills than the adults.

It was amusing to watch the birds feed. As a wave rolled up, combed over and broke, the white foam would chase them in, and as they ran before it, if it came on too fast, they would pick themselves up, open their wings till the cinnamon showed, and scoot in like excited children. But the instant the water began to recede they would right about face and trot back with it, splashing it up so that you could see it glisten. As they went their long bills—in the low afternoon sun strikingly coral red except for the black tip—were shoved ahead of them, feeling along through the wet sand, the light glinting from them; and if anything good was discovered deeper, the hunters would stop to really probe, sometimes plunging the bill in up to the hilt, on rare occasions when the tidbit proved out of reach, actually crowding their heads down into the sand.

Tracks and probings were to be seen on the beach where the Godwits had been. One of the long-legged birds would sometimes stop its work and lift up a foot to scratch its ear, and one that I saw feeding on the edge of a wave suddenly dropped and went through the motions of sousing itself, looking with its long legs and bill as comical as a human bather jumping up and down in the surf. While the Godwits were hunting absorbedly, sometimes the white foam of the next wave would flow in over their feet and encircle them, and at other times they would wait until the spray of a breaker was almost on them and have to scurry for it with open wings. When the tide was so low that the waves broke far out on the gently sloping shore, the birds hunted in a more leisurely manner.

They often brought up round balls, presumably small crabs or crustaceans, so big they had to gulp them down, and when tempting morsels were seen in their bills neighborly Gulls often gave chase. A hard pressed Godwit once

dropped its ball, but the pursuing Gull passed on without stopping to pick it up.

When the big brown birds flew they suggested round-shouldered Ibises except that their bills were not curved. In flight they often made a close flock calling *queep, queep, queep, queep, queep*, affording a beautiful sight as the light struck them and warmed up the cinnamon wings that make such a good recognition mark. They soared down handsomely showing the cinnamon, and as they alighted held their wings straight over their backs for a moment, the black shoulder straps showing in strong contrast to the warm cinnamon.

Though the flocks were generally most amicable, occasionally one or two of their number would get to scrapping. Two got hold of each other's bills one day and held on, one or both crying lustily. In a group another day two came to blows, first just opening their bills at each other and talking argumentatively. Later one of them made passes at the other till the harried bird lifted his wings as if meditating escape, and finally when a pass was made at his long unprotected legs, flew away. When one was teased by a companion it often cried complainingly, *go-way, go-way, go-way, go-way*.

In the flocks of brown Godwits, the few gray Willets looked small. They fed in the same way as the Godwits though their bills were shorter and they could not probe so deep, but they ran their bills ahead of them through the wet sand, probed as far as they could reach, and then trotted back before the oncoming waves. A thoughtless one sat down just at the edge of the water line one day, its back toning in with the sand, its long legs stretched out before it; but soon after it was comfortably settled up came the foam and it had to bend forward on its tarsus, raise itself, and flee up the beach. I often saw one resting, standing on one leg, or sitting at ease with white rump showing. When stretching, the black of the wings showed effectively as it does both when the birds fly up and when they alight with wings raised over the back. *Willet, willet*, they often called as they went.

One of the most interesting of the beach people from the far north was the solitary, preoccupied Surf-bird, with its short bill, spotted upper parts and streaked chest. It was social enough in nature, for when resting it was almost always with its fellows, as many as thirty-five being seen in a flock. And even when hunting it was generally with waders of other species. But in its hunting habits it was solitary, only one, two, or three Surf-birds being found feeding along the same stretch of beach, apparently because their short bill would not admit of their probing for their food, and there was not enough washed up by the waves to keep a hungry flock occupied. When six flew down on the beach within a rod or two one day, they quickly extended their line both ways till they were widely enough spaced to make the crustaceans go around.

The Godwit, sure of being able to dig up something when hungry, follows the waves when he feels like it and apparently thinks about something else between times; but the Surf-bird must take what the gods provide at the moment, and consequently has an air of attention, a preoccupied expression, as, Robin-like, he stands just perceptibly tilted forward on his long legs, watching, watching, for what the waves may bring. If his eager eye detects a crustacean he runs nimbly down the wet sand behind the retreating wave, dips forward, picks it up, and is erect again all in an instant.

At high tide one day two of the Surf-birds were standing on the sand ridge just above the water resting from their labors, one with its back to the incoming waves staring ahead of it as if lost in reverie. On the beach, one of the silent, solitary Aphrizas would often stand facing me, as if studying me intently, when, though I could not read its innermost thoughts, I had a good chance to note its light forehead and eye line, its white underparts and streaked chest. Two of the droll birds were found one day engaged in an amusing performance that suggested the sparring of boys. One turned sideways to the other as if on guard, then dropped the wing on that side and spread its tail till the white rump showed. The other in turn spread its tail and they hopped over each other, doing this a number of times. They would also dip their bills menacingly, and one of them sat down several times as part of the play. As they flew off they gave their wild *key-we'-ah*. <

When wanting to move down the beach one often flew close along under the green wall of the combing surf. When it alit its wings would be held out for an instant showing the clear white line down their length and the broad white base of the tail with the dusky tip. When on shore they stood around so much with their preoccupied dreamy gaze that, when one took wing and flew with swift strong wing strokes out across the surf and over the ocean, a disappearing white spot, you stood bewildered. Your idle dreamer was a child of the sea! Perhaps when it stood on the sandy beach with preoccupied gaze it was dreaming of its rocky surf-dashed home to the north, or of its rocky surf-dashed winter home to the south. How well its wild, keen, plaintive *key'-ah-wee* tells the story! <

Besides the large waders, the Godwits, Willets, and Surf-birds, there were flocks of little Sanderlings and Snowy Plover, looking like small chickens on the beach among the bigger birds. The Snowy Plover, plump, squat little fellows with head markings that suggest wide foreheads and backs that match the sand on which they love to sun themselves, when feeding on the beach would hurry back ahead of the foam, their short legs making them more in danger of getting wet than the long-legged Godwits. When resting, the plump little sandy-backed fellows kept by themselves. Sometimes as I walked along above the line of the tide, bits of sand would take legs ahead of me, the brown forms that squatted in my path having been entirely overlooked. When I saw them before they got up, and stopped to talk to them, the confiding little fellows flatteringly sat still or went on fixing their feathers, looking very comfortable in the warm sand. To me they seemed the most winning and attractive of all the lovely little Sandpipers. When they were surprised and ran from me they did it in a comical crouching way as if knowing their backs were sand color and trying to hide their black legs and plump white bodies! Their habit of bobbing the head is doubtless useful at times, but the motion often catches the eye when without it they would not be separated from the sand.

The slender Sanderlings, close seconds to the Snowy Plover in attractiveness, stand well up on their wiry black legs, the pure white of their bodies prettily accentuated by their clear black points—bill, legs, and patch at bend of wing. When feeding, one of them with bill down before him like the other waders, but with stubby tail sticking up over his back, his pretty form reflected in the wet sand, would start and trot fast after a retreating wave as its water rippled out over the small stones. Sometimes when he got a

crustacean he was, with reason, so afraid that some less successful hunter—be he Gull or brother Sanderling—might get it away from him that he would run distractedly this way and that, or start and run so fast you could scarcely see his black legs move until he found that his fellows were attending to their own affairs, when he laid his quarry on the ground and shook and prepared it for swallowing. Sometimes one or two would be seen taking a bath, ducking down and spattering and splashing with as much zest as if they did not spend their lives beside the water.

Unlike the Surf-birds whom you naturally think of as silent and individual, you think of the Sanderlings and Snowy Plovers as talkative flocks. When the tide was high one morning a band of about sixty Sanderlings were resting up on the soft sand back of high water mark making a pretty picture, standing in close serried ranks all facing the ocean as if "in meeting". One by one they started and ran back down the aisles till nearly all had shifted places. Then they rose and flew in a close flock with beautiful evolutions, their changing angles giving changing effects—one moment with wide wings they looked dark; the next, with wings at an angle, delicate as a shadow; then by a swift turn, all white. Flying from you with the light full on them the wings seemed to be carrying a white globe. As they circled and wheeled and circled in a close flock their soft social twitterings added to the charm of the picture. On alighting a large part of the flock ran down to the water together, then turned and ran back ahead of the incoming wave, back and forth till they tired of it, for the surf was high and the bank steep to be running up and down all the time. So they withdrew to the level sand above and stood in little groups resting, some preening themselves, some sitting down with bills over their backs.

One afternoon there must have been seventy-five or a hundred Sanderlings on the beach feeding, resting in social groups, or when flushed swirling out in graceful curves over the water and shore. Once at the full of the moon when the tide was very low and the ocean was a water color of soft shimmering grays and yellows, the surf broke so far out that the voice of the ocean was soft and soothing. Mounds of fresh kelp left by the waves were all tracked around by the birds, and as I looked from a distance across the wide expanse of gently sloping shore, Godwits and white-breasted Gulls stood along the water line and small Sanderlings almost invisible except as their white breasts were lit by the sun, ran after the waves, suggesting pearls rolling over the sunlit sand.

The birds that went over to spend high tide in the marshes, at the turn of the tide would fly back to be on hand for what low tide would bring, and one day I found a gathering of twenty-five Surf-birds, about fifty Godwits, and five Willets standing on the shore with the little Sanderlings ready to go crabbing.

Along the beach there were generally a few Gulls, mainly confusing mottled immature ones, standing around among the waders. One day I counted four Gulls to about thirty Godwits, again one Gull to forty Godwits, and another time one Gull, two Willets, two Surf-birds and about thirty Godwits, on the beach together. Occasionally a Gull would make an unexpected run down the beach for something, and if the water dashed up too close would cry out peevishly and fly back. Among the immature Gulls now and then there was one of the big adult Western Gulls whose snowy head, body, and

tail, and dark slaty mantle, were a great satisfaction in the confusion of dingy mottled ones; but the adults were seen mainly about the piers.

Five small Bonaparte Gulls with the black spot behind the ear were about the beach, exquisite creatures that for some reason made me think of gentle pigeons. As they hovered on spread wings, the black shoulder bars and tail-band of their immature plumage contrasting with their pure white bodies marked them handsomely. Quick of wing, one of these small Gulls hovered over a Godwit that had food in its bill, turning easily as the Godwit turned, till the distracted bird bethought him to swallow his catch. A Bonaparte at another time chased after a Sanderling, but although the small boy with the raft said "the Gulls get too lazy", I never saw them succeed in getting anything away from another bird, and rather suspected that they chased the small Sandpipers just to see them run!

While the young white Gulls of various species sat around the beach with the waders, large dark Heermann Gulls with red bills frequently passed overhead on their way to the pier, at the end of which they would be seen sitting on the water. Long brown streamers of kelp floated close under the surface here, and fifteen of the Gulls were counted in one place probably feeding on something in the kelp. They were often seen standing on the railing of the pier, some of them getting an insecure footing on the electric light globes, while a few of the beautiful white Western Gulls perched on the electric light poles and also on top of a tower. When a school of porpoises passed near the pier, their fins showing as they rolled up above the surface, the Gulls were apparently indifferent; but at Catalina Island when a sea lion had a meal the Western Gulls followed him out to a distance, flying screaming over him.

A few rods from the end of the Venice pier several Cormorants were seen sitting out on the ocean one morning and one flew low and evenly over the surface—its head and neck extended like a stick of wood—casting its shadow over the water. Ludicrous creatures Cormorants certainly are in all their ways of life. One sat on the beach pluming his feathers one morning as I came along, twisting his long snaky neck around so as to smooth his breast and shoulder feathers. He would appear to be starting down the slope of the beach and then suddenly open his wings and hold them out as if afraid of falling on his bill, acting so peculiarly that I imagined that he had been wounded. However, when he decided to go, raising both his big paddle feet at once, he proceeded with high awkward hops down the shore. When he finally got to the surf he let it wash him out and in once or twice, looking so helpless that I was sure he must have been wounded. He also rode through the breaking surf, his body down under the foam, his head held high, clear of it. When thoroughly soused he let the waves wash him in again, and came walking laboriously back up the beach, slim and dripping, his bedraggled tail trailing over the sand. Apparently he had been taking a bath! After oiling his feathers he swam out and dived, staying under so long and swimming out so far that he showed his full aquatic power. When he was in the rollers and saw a foaming breaker coming he would bend over, disappearing as the water splashed. When the waves had flattened he would reappear in the smooth water between seas.

A tame Cormorant often seen along the beach was one of the interesting bird characters of Venice. One day I saw a woman walking slowly behind him with arms extended, driving him down to the water as if he had been a goose.

The next day I saw presumably the same bird coming up the beach toward a cottage, head erect and tail trailing, walking with the mincing gait of a woman with high heels—a droll figure! As he went along he would stop, spread out his wings and flap them hard, again and again, as if to get out the water. Once when resting he stood on one foot, his weight partly borne by his stiff tail, his head twisted around to rest on his well-filled pouch. When a man and a boy came along the lordly bird had no intention of making way, and the man shook his handkerchief at him. At this the affronted Cormorant flew off with an angry squawk and the man doubled up with laughter. Another man, evidently amused by the bird's assurance, clapped his hands to make him fly, and other people passed close by, looking at him curiously without disturbing him.

But one morning as I walked along the beach, to my dismay and horror I came on the pitiful body of a dead Cormorant, its bill tied up in bow knots! Could this have been done in ghastly mirth while he was still alive? Had one of the most interesting characters of all the multitudes on the beach fallen victim to such barbarity? An exhibition that I witnessed one Sunday made it seem possible. Scattered along in small groups down a mile of shore there must have been from a hundred and fifty to two hundred Godwits, when a man and a boy in bathing suits came down the beach, the man sending the child to pick up stones for him and throwing them wantonly at each group of the beautiful birds as he came to it. My lovely Godwits, which it seemed such a rare privilege to watch! With blood boiling I saw the pair go and come, for the man's face was so hard there seemed no appeal. Good training he was giving his child! The next morning one poor Godwit with dangling broken bill and another with a broken leg lying on the sand attested the prowess of man—his noble prowess!

Before this the beautiful waterfowl had been so rarely tame along the beach that they would walk down the shore ahead of me, and every day spent among them was a day of new and rare delights, of intimate pleasures. But now the hunting season opened and each day brought new ravages in the wonderful flocks. Just as the season opened, while I was watching a delightfully tame group containing thirty Godwits, two Willets, a Gull, and two Surf-birds, enjoying their familiarity and their interesting ways, a smart type of city boy appeared, and taking a gun out of a case prepared to shoot my friends. As he was still within city limits I stopped him temporarily by calling his attention to the fact, but I knew it was only a short respite and my only hope for the birds was their apparent recognition of a gun. Two other boys with guns and bags came along later, outside of city limits. At their first shot all but one Surf-bird flew, and at the second shot he fell, flopping distressingly. Before the boy could get him the waves washed him out, out and in, their toy, a limp bundle of feathers; a moment before instinct with life and individuality, a dauntless child of the sea, with power of wing and intelligence to carry him from pole to pole. When the poor wounded bird was picked up its sufferings were prolonged cruelly by the boy's ignorance of the way to kill it. A Coot was found lying on the beach, doubtless discarded by some hunter who had no use for it—now half devoured by horrible creatures of death.

In a few days the beach was like a Soldier's Home, the shooting being kept up from early morning out on the marshes. One day on going up above

the wave hardened beach to the level where drifted seaweed and hummocky sand gave protection and soft resting places, I discovered a large circle of quiet birds. The big Godwits stood on the outside of the circle and next to them about thirty Surf-birds, most of them sitting down, while inside was a close bunch of Sandpipers. It was a beautiful sight! But, alas, a number of both Godwits and Surf-birds were maimed. Poor creatures, turning to each other for companionship in their man-inflicted suffering. Wounded birds were on every side—broken-legged Godwits, crippled Surf-birds, cheerful little Sandpipers stumping around pitifully on one foot, and a poor little trot of a Snowy Plover with one leg dangling, together with beautiful Gulls, one apparently with a leg shot entirely off. This horrid maiming increased until I felt thankful when even the smallest Sandpiper put one foot down before the other and trotted off normally. And when a man in khaki aimed at one individual, picked it up instantly, and killed it humanely, he stood apart as a legitimate sportsman, one who, like the scientific collector, shoots to kill and considers it a disgrace to maim. But to stone flocks of waders, to shoot scavenger Gulls, and murder tame Cormorants—surely the hunting instinct needs education and regulation! Meanwhile automobiles hurry down to the gun clubs with callow youths and pump guns.

When a gunman had driven all my water birds from the beach, one morning I went down the weed thickets between the shore and the marsh, discovering among others a Song Sparrow, a Shrike, a Black Phoebe, a Yellow-throat, a number of Belding Sparrows, and a charming little Tule Wren; also finding the flock of Meadowlarks which had been singing delightfully mornings although it was the last week in October. From the weed thickets I went on down to the sand dunes so solidly compacted that walking over them was almost as exhilarating as walking on crust. At the foot of the beautiful dunes grew queer succulent plants suggesting curls and varying from green to dark reddish, while on the dunes grew various vines and flowers that made me wish for the knowledge of a botanist. The dunes overlooked the marshes which between their intersecting waterways were ruddy with some interesting plant. Small aggravatingly vague Rail-like forms were seen creeping stealthily along the edge of some of the patches of open water and there were hints of exciting possibilities. What rare delight it would be to paddle silently through these waterways and really see the birds and plants hidden there—to sit quietly in your boat and see the great flocks of Ducks come stringing over from the ocean, hundreds of them tired from long journeying coming to rest in the quiet waters of the lagoons! Worlds of birds were there already but too far away for recognition.

Although I could not see the multitudes of birds that frequented the marshes, besides the Gulls and waders who were regular habitues of my strip of beach there were many passers-by who looked in on our shores. A solitary Loon, slender-billed and tailless, was seen swimming near one day, looking in shore with yellow eyes; and a few Terns of different sizes were seen, sometimes plumping down into the water, sometimes flying high, headed over the sea. While looking out over the ocean one morning I was delighted to discover the droll figures of four great California Brown Pelicans coming down the shore. With necks drawn in, huge bills pointing down, and wings flapping, they suggested ancient dwarfs with huddled-in forms. Three more passed down the next morning, such big droll creatures that men on the beach

turned to look at them. Later, when I was a few miles farther down the coast, at Redondo Beach, two Pelicans flew in, lighting wide apart on the water, where they sat with bills folded on their neeks, rocking like small boats at sea. Their arrival created great excitement among the Gulls, who gathered around them screaming, and even lighting down close beside them trying to get their fish away from them. At Venice the next day four more Pelicans passed down the shore, flying low over the water in a close row, bills down in front of them ready for action. All four would flap a few strokes, then all four would soar with wings outspread, then gradually all would take to flapping again, then change to soaring, like rowers in a boat.

From the strip of land between the shore and the marsh, one day a strange nasal honk high overhead made me look up. A solitary figure, a pure white bird with black wing tips was flying swiftly across the sky. A Snow Goose! The first I had ever seen. I shall never forget the thrill of that moment.

The Ducks that came to the marshes were seen only at a distance. "There's a Duck!" a woman exclaimed one day pointing to a Cormorant, smilingly, glad to show me what I wanted. But a puff of smoke out over the ocean did turn into a line of Ducks. "They go out over the ocean and stay when the hunters are shooting on the marshes", my bird-wise friend informed me, "coming back when the marshes are quiet". However that may be, when it was raining a flock flew in low over the water.

The only Ducks seen near at hand were three handsome Scaups keeping at a safe distance back of the surf, and great sea-ducks—Scoters of various species. While I was resting on a short stretch of shore without birds one noon, enjoying the lazy swash of the waves, suddenly out on the water between seas three dark Ducks appeared and disappeared before I could focus my glass on them. On reappearing they proved to be young Surf Scoters with white spots at the base of the bill and back of the ear. They rode the waves prettily, sometimes preening themselves as if at home, sometimes rising and shaking themselves, showing the light on the middle of the belly; or, with bills over their backs apparently napped, "rocked in the cradle of the deep" in very truth. They might have been black corks bobbing on the water for all they seemed to care what the waves did to them. But after a short nap they dived, leaving me to enjoy the sparkling surface of the water, the level lines of buffy cloud over the Santa Monica Mountains, a shifting wedge of Ducks that flew across to the lagoon in the marshes, and a flock of slender white Terns that passed spirit-like through the sky.

One day two female White-winged Scoters flew into the rollers near shore with five others that must have been American Scoters (*Oidemia americana*) as they showed no white markings on their black plumage. But most of the great black sea birds seen were Surf Scoters. After watching young for a week I was excited by the appearance of two of the strikingly marked adult males, with swollen bright orange bill, a snow-white patch above it, and an oblong white patch at the back of the neck, the bulging of the swollen nostrils at a distance suggesting the high straight bill of the Canvasback. The family are well marked. The neck patch of the male makes a striking field character, as do the two white spots at the side of the head in the young; while the female, lacking the ear patch, can be told by elimination.

A handsome male which flew in one day was joined by five young ones,

whether recognizing parental authority or not, cannot be told. As he rode the waves several times he put his bill down before him and then threw it up as if swallowing. Two that I startled one day near shore rose and flapped their wings till their big webbed feet showed above the water. A flock of forty or fifty once came plumping down, their webbed feet held out sideways like paddles.

One of the big sea birds that I watched did actually go through the breaking surf prow on, but he must have been an inexperienced or unskillful one who had lost the chance of escape, for none of his fellows ever did such an unseemly thing. It was a pretty sight when, under a gray sky, the beautiful long green rolls of surf rose and combed over and the Surf Scoters came in from the green swells behind to feed in front of the surf and do skillful diving stunts to escape being pounded by the white waterfalls. As the green wall ridged up over their heads they would sit unmoved, but just as the white line of foam began to appear along the crest they would dive, staying under till the surf had broken and the water was level again.

One day a young *perspicillata* had the stage to himself, coming in so close that I could see the peculiar swollen base of his bill. Once he stood up and flapped his wings proudly under the very roof of a combed-over breaker, ducking under only just in time. Often when feeding he would come up as if to breathe between breakers, but once he stayed under from the breaking of one wave till the full rounding up of another, and no sooner came to the surface than he had to duck under again precipitately; and another time he actually got caught in the edge of the spray. After a time he seemed to tire of the constant ducking, and after rising and flapping his wings near shore went back where he could ride the green rollers without more ado, or perhaps he merely wanted to feed from the sea-weed farther out.

A flock of about twenty-five Surf Scoters that I tried to count one morning—some would generally round a wave at the wrong moment and confuse my count—when swimming Indian file, on reaching a certain point disappeared one after the other, doubtless going down to a streamer of kelp under the surface. They were past masters in timing the breaking of the rollers, again and again riding over one the instant before the crest broke into foam. When feeding far out from shore a few of the sea birds would sometimes get widely separated from the rest of the flock and after rising up to look over the water would swim or, if too far, fly across to rejoin their companions.

One drizzly morning when the beach was deserted the Scoters were in near shore. Twelve were so near I could see the two light spots on the side of the head that mark the young *perspicillata*; another time I counted thirty-six all with the white head spots. Fifteen more were out too far to distinguish details. The surf was rolling in, sea after sea, and the great birds rode the green rollers with as much apparent enjoyment as children do the chute-the-chutes! When a squad were down in front of the surf line and the foaming water-fall came, it was laughable to see the row of tails disappear below. A careless Duck once got carried half way up the concave of a breaker before he dived. Another one had a still more humiliating experience. He attempted to round a roller when it was just ready to break and as he was surmounting it, it began to comb over and he was forced to dive at the very crown of the wave to escape being carried down and pounded by the heavy surf! When

diving through the green rollers near shore the black bodies of the Scoters, paddling feet and all, showed as plainly as beetles in yellow amber.

What with the flocks of Scoters and the innumerable, ever-shifting throng of waders, interesting moving pictures were almost always to be seen on the beach. One afternoon when there were a large number of waders, perhaps a hundred and fifty Sanderlings together with Willets, Surf-birds and Gulls on the shore, in the sun path a flock of Surf Scoters were rocking over the quiet green rollers, while in the lower white surf lines, men with long rakes were clamming. A steam launch with tightly rolled sails went hurrying by, and down the sunlit cliffs at the foot of the bay two schooners with square-topped sails lay at anchor.

At sunset another time, as I walked home up the beach breathing in the strong ocean air, the only birds in sight were swirling flocks of belated Sandpipers ever resolving ahead of me. Long straight lines of deep voiced surf were breaking well outside at the low ebb of a full moon tide, the great rollers ridging up behind. And over the gray sea a deep glittering sun path led to a sunset sky that grew and ripened to rich purples—one of the sunsets when a red ball goes down into the Pacific. Long straight lines of deep voiced surf breaking far out at the beak of the moon, following obediently the rhythm of the heavenly bodies—long straight lines of white surf with great gray rollers coming in behind! How big and simple Nature is in all her processes! How microscopic man becomes viewed in the perspective of the orderly march of the universe! And yet while bird and beast blindly follow the laws Nature has laid down for them and live and die as they must, man alone, mercifully or unmercifully controls their environment, man alone can trace their course from pole to pole and try to read the reasons why. And although he in turn fail to solve the riddles of the Sphinx, he alone, humble student of Nature's laws, waiting in the stillness of the forest or listening in silence to the deep voice of the ocean, moved by the bigness and truth of Nature, can choose to try to keep step in the orderly march of the universe.

Washington, D. C., December 4, 1915.

NESTING OF THE BAND-TAILED PIGEON IN SOUTHERN ARIZONA

By F. C. WILLARD

WITH ONE PHOTO BY THE AUTHOR

THE PAST season (1915) has been one in which I was fortunate enough to make a number of detailed observations on several of our local birds, interesting despite the fact that they pertain to common species. Among them was the Band-tailed Pigeon (*Columba fasciata*). During the late summer and early autumn, I was located in the Huachuca Mountains, in Huachuca Canyon, a short distance above the army post of that name. There were a few pigeons nesting in the vicinity, and one pair near camp was watched quite closely from the time the nest was begun until the egg was laid. Nest building was carried on only in the early morning hours, from sunrise till about 8 o'clock. Both birds were present, but the female alone seemed to be engaged in the actual construction of the nest, which she went

about in a very lackadaisical manner. The pair would sit together on the few sticks already in place for many minutes; at last the female seemed to remember that she was nest building, and flew up the mountain side followed by the male. Considerable time was spent on every trip after material, so very few sticks were added each day, and it was not until six days had elapsed that the flimsy platform was completed and the egg laid. This last event occurred on July 14. On September 18 I frightened another pigeon from an apparently completed nest. I think it was a female but could not tell with certainty. The other one of the pair was close by, and the two flew away together.

A few days later a flock was observed feeding on acorns in a group of large oak trees (*Quercus emoryi*). The antics of these birds were more like the



Fig. 34. A TYPICAL NEST OF THE BAND-TAILED PIGEON; FROM THE HUACHUCA MOUNTAINS, ARIZONA.

acrobatic stunts of parrots than of pigeons. They would walk out on the slender branches till they tipped down, then, hanging by their feet, would secure an acorn, and drop off to alight on a branch lower down. In spite of their large size, pigeons are surprisingly inconspicuous when thus engaged in feeding among the leaves. The Prairie Falcon and Cooper Hawk take considerable toll from the flocks. These two terrors of the air will dash into a tree and grab a pigeon off a branch, rarely making an unsuccessful raid. The Prairie Falcon is the chief offender.

This is an appropriate place in which to state that I have never found a nest of the Band-tailed Pigeon with more than one egg or one young bird in it. Also that I have never seen a pigeon carry an egg from the nest, a feat that one writer has claimed to have observed in this region. I have, however,

missed taking several eggs by their being knocked from the nest by the startled bird as she flew off.

This fine pigeon is not uncommon in the various mountain ranges of Cochise County, Arizona, and there seems to be a general willingness on the part of hunters to observe the closed season. This is not so true among the farmers, but comparatively little damage is done thereby, as the class of farmers is not a very numerous one with us. I hope the observance of the closed season will lead to an increase in the number of pigeons, but I think two years more at least should be added to it. An effort will be made next year to secure such legislation in this state.

Tombstone, Arizona, February 25, 1916.

THE SPEED OF FLIGHT IN CERTAIN BIRDS

By ALEXANDER WETMORE

DURING early November, 1914, while carrying on field work around Tulare and Buena Vista lakes, California, in company with Mr. Tipton Matthews, Deputy Game Warden of Kern County, I had excellent opportunity for observing the speed of flight of certain birds. We had our headquarters at Lemoore while in the northern part of the area, and daily made trips back and forth to the shore line of Tulare Lake in Mr. Matthews' auto. Work around Buena Vista Lake was carried on with Bakersfield as a base. In the open valley birds of various species were abundant, and in traveling about I had leisure to watch them. Often Horned Larks or other birds flew up close at hand and maintained a course parallel to that of the car. On such occasions Mr. Matthews increased our speed gradually until we were travelling at a rate equal to that of the bird. At the same time I kept close watch of the bird and the speedometer. In this way we were able to gauge the speed of flight of these individuals with a fair amount of accuracy. Following is a summary of the observations made. Unless otherwise stated the notes refer to a single individual.

Species	Locality	Date	Rate of flight in miles per hour
<i>Ardea herodias</i>	Tulare Lake,	Calif. November 7, 1914	28
" "	" "	" " " "	28
<i>Buteo b. calurus</i>	Bakersfield,	" " 10, "	22
<i>Cerchneis s. phalaena</i>	"	" " " "	22
" " "	"	" " " "	25
<i>Colaptes c. collaris</i>	Tulare Lake,	" " 8, "	25
<i>Otocoris a. actia</i>	" "	" " 6, "	23
" " "	" "	" " 7, "	28
" " " (several)	" "	" " " "	26
" " " (2)	" "	" " 8, "	22
" " " (3)	" "	" " " "	24
" " " (several)	Bakersfield	" " 10, "	27
<i>Corvus c. sinuatus</i>	Foot of Tejon Pass,	" " " "	24
<i>Lanius l. gambeli</i>	Tulare Lake,	" " 6, "	28

Horned Larks were more abundant than other species along the roads, which accounts for the number of tests made with them. It is assumed that they were all *Otocoris a. actia*, as specimens collected belong to that form. Their speed of flight, as shown in the table, varied from 22 to 28 miles per hour. In some instances observations were made on two or three birds at the same time or, on two occasions, on small flocks. In one test a Horned Lark travelling parallel to the car was easily outdistanced with a speed of 30 miles per hour.

Two Great Blue Herons observed separately travelled at exactly the same speed. The rate of flight of a Western Redtail was found to be 22 miles per hour. One Sparrow Hawk that flew parallel with us for nearly a quarter of a mile also maintained an even rate of 22 miles.

In these observations the birds that were timed were all near at hand. The two Great Blue Herons were about seventy yards away, the individuals of the other species much nearer. As the distance of the bird from the car increased there was an increase in liability to error, but in the case of these two herons, which were gauged separately, the speed registered the same, and all of the readings may be considered fairly accurate. With the Horned Larks the observations were made often at a distance of only 30 or 40 feet. With all of these birds only those pursuing a direct flight were recorded. When the course was erratic (from side to side) the birds were disregarded.

In examining the results a surprising agreement is found in the rate of flight of birds entirely unrelated, and in species varying greatly in size. There is no doubt that if frightened any of those observed might have made a more rapid course, but I believe that the figures show approximately normal flight in all. That these speeds fall far below those attributed to birds in general will, I think, be appreciated at a glance.

Washington, D. C., March 31, 1916.

A VISIT TO HAT AND EGG ISLANDS, GREAT SALT LAKE

By R. H. PALMER

WITH FIVE PHOTOS BY A. O. TREGANZA

ON THE 14th day of May, 1915, four members of the Salt Lake branch of the Cooper Club began a trip planned for the purpose of visiting the two principal bird rookeries located on the islands of Great Salt Lake.

The party left Salt Air at 4 P. M. and encountered a calm for several hours in which very little progress was made. Time, however, did not rest heavily on the party. The cool afternoon followed by a gorgeous sunset, the flight of an occasional bird, the ever present snow-covered hills, and the gentle, restful rocking of the boat, tuned with the pulse of the waters, were all conducive to bringing forward to the present memories of past experiences as well as comments appreciative of our most charming and care dispelling surroundings. The hours until sunset came and went, and finally the sun slowly passed down behind the western hills and the time of shadows and haze followed, adding mystery to the strange outlines of earth and sky and water, while the friendly little wavelets snuggled warmly up to the sides of

our goodly craft. The spirit of pervading quiet settled down over the face of the brooding waters.

However, shortly before midnight, a stiff wind came out of the northwest freshening up the waves and adding tone to the erstwhile quiet aspect of the night. This soon increased to a gale accompanied by a heavy sea. On all sides the threatening wind beat into a driving spray the curly white crests of the salty waves. Our course was to the northwest in the face of the wind. No headway could be made by tacking, owing to the strong adverse wind and the heavy sea, which not only drove the boat leeward but also dashed over the boat, saturating everybody and everything except the provisions that were safely stored away under the hatches. The anchor was dropped at about 3 A. M. in some sixty feet of water and at a distance of a mile or so west of the south end of Antelope Island, and the boat was bailed out preparatory to snatching a little sleep.

Towards morning the wind quieted down and the party arose and made a few feeble and sluggish attempts towards the prevention of getting any colder. The prevailing opinion at first was that we had frozen during the night, but this illusion proved to be produced by the stiffness of our clothing, due to its being impregnated with salt from the previous night's saturation. As there were few or no facilities for exercise, the situation resolved itself into each of us telescoping as far as possible into his clothes, mudturtle-wise, and awaiting the rising sun. How welcome were the pink tints reflected from the western peaks can be imagined only by those who were members of the party. The sun finally came over Antelope Island very slowly, and with it a slight breeze so that we were able to make our way to this island.

A brief examination was made of the vicinity of our temporary camp but nothing of any ornithological interest was found. After a stay of perhaps two hours, we embarked at about 10 A. M. for Hat Island, some thirty-eight miles away. We encountered a slight northerly breeze so our progress was slow. A few solitary gulls, several small flocks of from four to twelve Eared Grebes feeding on the floating refuse of the lake, an occasional Great Blue Heron, and several flocks of the White Pelican were seen. Now and then the peep of a hummingbird, presumably the Black-chinned, was heard in the air above. We also saw two cormorants in the distance flying close to the water, according to their custom. At about three o'clock in the afternoon a stiff northeast wind sprang up, and we made very good time toward Hat Island. When in the current from Bear River, some ten miles from the island, we saw a large number of gulls feeding in the water, presumably upon the food material brought in from Bear River. Towards evening many isolated gulls overtook us while they were returning from foraging expeditions to the mainland.

The nearer the island the more numerous and vociferous did the bird life become. At 7:35 the sun sank into the red and golden west and in about half an hour we passed into the quiet lee of Hat Island. Here we were greeted by the nasal squawks and aerial courtesies of literally thousands of gulls that arose from the island and wheeled around over our boat. Words are inadequate to convey any impression or to give a concept of the vastness of their numbers. They seemed to literally jostle one another in the air as they clouded the sky with their mass. They were suggestive of a huge swarm of bees or the clouds of Passenger Pigeons that Audubon describes. When in

the near vicinity of the island, a very marked musk-like odor was observed. This came from the deposits of guano on the rookery.

A landing was made and a temporary camp pitched on the sandy beach. Great care had to be exercised in selecting a camp site to avoid destroying the numerous nests of the gulls. After a hasty supper we examined a few of the nests in the near vicinity, and then repaired to our sandy couches to impatiently await the coming of Sunday morning. All through the night were heard the various calls of the gulls, the occasional hoarse croak of the Caspian Tern, now and then the dissatisfied grunt of the Heron. This latter bears a close resemblance to the first part of the very unmusical call of the American Bittern.

The early matins of the gulls forbade sleep after the first appearance of dawn, so we all arose early and made a rapid excursion over the nearby beach. Near the camp were found sixteen nests of Caspian Terns that had chosen this location for their colony. To this reference will be made later. After a hur-

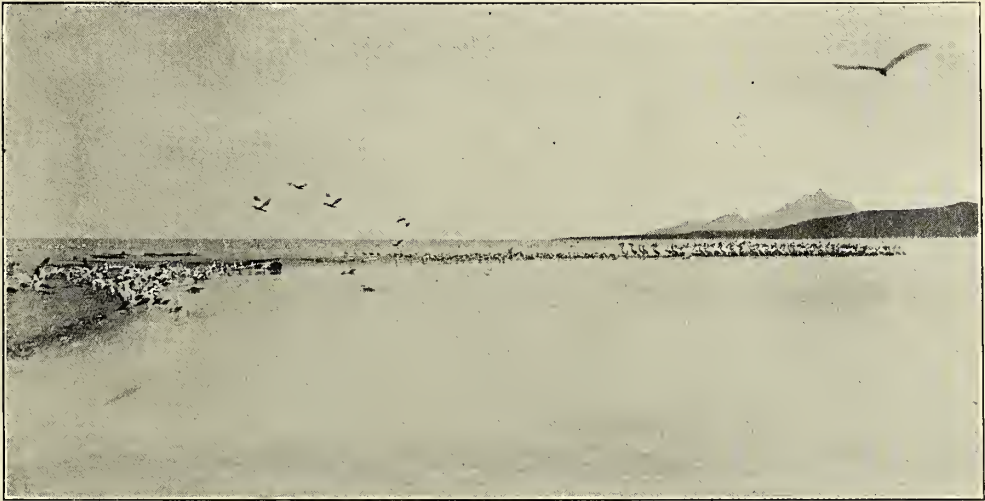


Fig. 35. SAND SPIT, WITH RESTING FLOCKS OF PELICANS AND GULLS. CARRINGTON AND STANSBURY ISLANDS IN THE DISTANCE; LAKE BONNEVILLE LEVELS SHOWN ON THE FORMER.

ried breakfast a somewhat detailed examination of the island was made. Hat Island is located about thirty-five miles almost due northwest of Salt Air. It probably derived its name from its partial resemblance to a broad-rimmed straw hat that had lost its band and hence had suffered vertical telescoping. It is roughly circular in form, about thirty rods in diameter. On three sides the beaches gracefully flank the central eminence that rises to a height of some seventy-five feet. On the southeast side the beach is much the widest; also from that side a spit extends (shown in figure 35) out into the lake for about ten rods. This spit extends for perhaps a mile farther under the water. It was formed and is being extended by the prevailing northwest winds that cause the waves to beat against the northwest side of the island, where they have eroded away the rocks, carried the resulting sand around each side of the island, and deposited it on the lee side. At first two short spits were formed on either side. As the work of the waves progressed the two spits grew in

length, and finally joined in two graceful curves, leaving a small pool in the V-shaped depression between them. The sand along the beach and spit is almost entirely oölitic in structure and hence lends itself exceptionally well to the rolling action of the waves. The crown part of Hat Island is composed of a hard, almost black, conglomerate.

There was little vegetation to be found on the island and this composed of very few species. The only plants observed were one species of allium or wild leek, one cruciferous species resembling the shepherd's purse, one species of the borage family, one chenopodium, one species of cactus, alfileria, and one of the greasewoods. The last was somewhat plentiful while the others were merely sporadic.

The fauna on this island was likewise extremely limited in number of species. In addition to a few insects, we found only one species of lizard and six species of birds. The latter, in the order of their relative



Fig. 36. CALIFORNIA AND RING-BILLED GULLS ON HAT ISLAND. THERE ARE 754 BIRDS INCLUDED IN THE PICTURE.

abundance, were: the California Gull (*Larus californicus*), the Ring-billed Gull (*Larus delawarensis*), the White Pelican (*Pelecanus erythrorhynchos*), the Great Blue Heron (*Ardea herodias treganzai*), the Caspian Tern (*Sterna caspia*), and Killdeer (*Oryzochus vociferus*). Of the last we saw but one individual, and that was probably there as a mere visitor. The other five species were all found nesting on the island.

It is impossible to give an accurate estimate of the bird population of the rookery on Hat Island, hence the following is intended to be merely approximately correct. It is possibly correct within a ten per cent error. The California and the Ring-billed gulls comprised a majority of the population. It is impossible to state with any degree of definiteness which of these two was the most numerous. However, from the examination of a large number of individuals, it seemed that the California Gull was in the majority. An idea of the gull contingent will be had from figure 36. This picture was taken on the

southwest side of the island, where the birds were the most abundant and the view less obstructed by rocks and vegetation. By actual count of the birds in figure 36, there were found to be 391 on the wing above the sky line and 330 below. Allowing a ten percent increase in the latter to account for the birds that are concealed behind the rocks and vegetation, there would be a total of 754 birds that were within the field of the camera. Taking as a very conservative estimate that this picture would include one-tenth of all the gulls that inhabit this island, we get 7540, or practically eight thousand as an estimate of the gull population. Other estimates, however, range from 15,000 to 20,000.

There were, perhaps, two thousand White Pelicans, some four hundred Great Blue Herons, and about fifty Caspian Terns. Thus summarizing, we would get the following as an approximate estimation of the bird population of Hat Island. Considering the small size of the island, it will be seen that its population is relatively dense.



Fig. 37. NESTING GULLS. PRACTICALLY ALL THE BIRDS ARE FACING THE SUN.

California and Ring-billed Gulls.....	8,000
White Pelicans	2,000
Great Blue Herons	400
Caspian Terns	50
Total	10,450

CASPIAN TERN.—There were very few of the beautiful Caspian Terns; twenty-five pairs would probably include all that our party saw on the island. There was a small colony of about twenty that nested on the beach near the point where we had inadvertently pitched our camp. Some of the eggs examined in the colony were fresh, and others partly incubated. All the nests were located in a space not more than twenty feet square. The nests were built each in a small hollow about two inches deep by six inches in diameter, and were crudely lined with short sticks. The eggs in all cases were two in number. The outline of the egg showed a very pointed oval. They normally have a pale blue background and are mottled with a brownish pigment. The mottles or blotches are larger and more vivid on the large end of the egg.

It was in this colony that the piratical tendency of the gull was first observed. Owing to the proximity of our camp to the colony, the terns, which are shy birds, abandoned their nests. The gulls, which have little or no fear of man, and no compunction about egg stealing (of this we found ample evidence), raided this colony and destroyed a number of the eggs. The remainder were taken by our party as specimens, as it was evident that they would otherwise be destroyed.

CALIFORNIA AND RING-BILLED GULLS.—The nests of these birds were found in all parts of the island though they were the most plentiful on the beaches of the south and west sides. An idea of their abundance may be gained from figure 37, which was taken on the south beach. It is of interest to note that all the nesting birds are facing in one direction, the east. Nests were found on all parts of the island, from the beach within a few feet of the water to the top-most ledge in the crown of the Hat; from the sandy beach to the nooks and crannies of the rocks, and under the greasewoods; two were even found in abandoned nests of the Great Blue Heron. They were in the parts of the island appropriated exclusively by themselves, and among the nesting colonies of the White Pelicans and Great Blue Herons. For a description of the gulls' nests reference may be made to the description of the nest of the Caspian Tern, with the addition that those of the gulls were generally scantily lined with a few feathers and squirrel-tail grass.

Very great diversity was seen in the individual eggs of different clutches. Some clutches were very light and sparsely mottled, others were almost entirely of a sooty brown color, the blotches covering the egg almost completely. A few had well defined streaks like the oriole's or red-winged blackbird's. One of the clutches was entirely different from the usual type in being blue in color and almost entirely unmarked. This can probably be explained by assuming some abnormal condition of the gland or duct that secretes the pigment, thus preventing the flow of the brown coloring matter with which the eggs are normally blotched. The eggs were a very pointed oval in outline and uniform in size.

The clutches were practically completed at the time of our visit (May 16) and usually contained three eggs. Occasionally two and rarely four were found. Only in exceptional cases were young gulls found and these were but a day or so old. Figure 38 shows one of these cases. The protective coloration of the young is here well shown by the likeness of the small elongated dots and background to the lights and shadows under vegetation. A query, however, might be interposed, for the light and shadow scheme is reversed in the bird, that is, the background on the gull is light while with the surroundings it is dark.

An interesting condition was noted among the gulls that might be called involuntary parasitism. Several clutches were found with one egg that varied greatly in its markings from the other two. At first this was accounted for by assuming that the parent bird deposited an egg that simply varied in its markings from the other two. Finally, however, there seemed to be so many of these cases that another explanation was sought, and what we believed to be the key to the true explanation was found in the presence of another clutch near by, *with the identical markings of the odd egg in the first clutch*. We concluded, therefore, that the second gull had mistaken her neighbor's nest

for her own and, acting on this impression, had deposited an egg therein. Quite a large number of instances of this kind came under our observation.

We observed several interesting attempts on the part of gulls to conceal their nests and eggs while they were absent. This was accomplished by covering them with a few feathers and grasses. In addition to the hiding aspect, there might also be in this scheme an idea of protection from changes of temperature. As is well known, this device is resorted to by nesting geese and several of the ducks.

The homing instinct of the gull was evidenced by a rather remarkable and appealing instance. A dead gull was found on a nest. An examination of the bird revealed that she had received a gunshot wound in the large pectoral muscles of the breast, the blood from which had stained her white breast

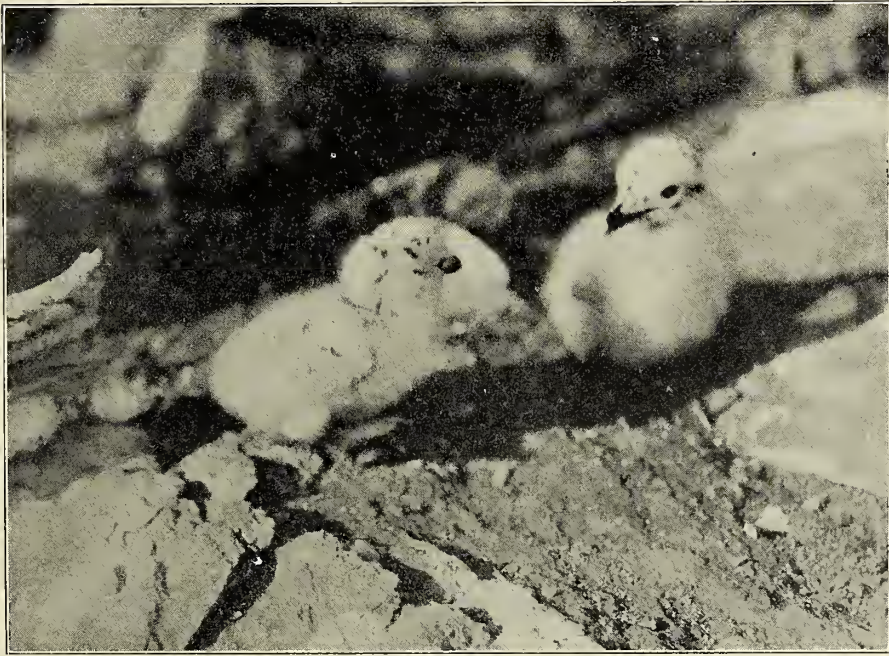


Fig. 38. YOUNG GULLS. THE DISRUPTIVE NATURE OF THEIR MARKINGS CARRIES OUT THE SCHEME OF LIGHTS AND SHADOWS SHOWN IN THEIR IMMEDIATE SURROUNDINGS.

feathers and the eggs that she had flown thirty miles to reach. I would that the thoughtless marksman that fired the fatal bullet could sense the stab that every beat of her pinions gave as she performed this journey, her last act of maternal devotion.

WHITE PELICAN.—A large number of pelican nests were found on the east and south sides of the Island. All these were at some distance from the shore, and among the low greasewoods. The nests bore the appearance of being simply a mass of pebbles and sand that had been scooped together in a mound about twenty-four inches in diameter and four inches high. There was a shallow depression in the top of the mound which was lined with short twigs. In this the eggs were deposited. Several pelican eggs were found scattered here and there on the ground. As all of these that were examined were fresh

the possible explanation is that they were laid before the nest was built, or possibly while the eggs that had previously been deposited in the nest were being incubated. The eggs of the pelican are white and have a very rough texture. They differ from the eggs of the terns and gulls in being elliptical in shape.

The nesting season of the pelican apparently extends over a period of five or six weeks at least. It probably begins some two weeks before those of the gulls and Caspian Terns. This was indicated by the presence of young pelicans some two weeks old, and eggs in all stages of incubation, as well as unfinished nest mounds. The feeding habits of the young pelicans was a matter of considerable interest. It had always been the opinion of the writer that the young were fed from the pouch of the parent bird. However, upon observation, this was shown to be at variance from the facts. The parent bird opens its mouth and the young one thrusts its head down into the throat, while the old bird contorts itself, presumably in the efforts to aid in the regurgitation of the partly digested food. It is possible, however, that when the young become more mature and there is no longer a need for predigested food, they feed directly from the food carried in the pouch.

The young birds are hatched entirely naked, and it is only when they are a week or ten days old that they acquire a scant covering of down. The gregarious habits of the pelican are well demonstrated in the young as well as in the adults. As soon as the young are able to leave the nest and waddle about with the aid of their stubby wings, they gather in bands. Instances were noted where the young had evidently left their nests at too early a date, and, being unable to hold their own, had been trampled to death by their larger associates.

We noted several examples of the nuptial excrescence that forms on the upper mandible of the adults during the mating season. I have consulted much of the literature on pelicans, but thus far have been unable to ascertain the function of this curious growth that is lost so soon after the breeding period. It probably bears some kin to the red comb and wattles of several of the gallinaceous birds that seem to function during the same period.

GREAT BLUE HERON.—It seems rather strange that a bird with the solitary habits of the Great Blue Heron should be gregarious while nesting. This can probably be explained by the added protection that numbers give. The nests of this bird were found on the east side of the island from some three rods from the water to the top of the crown of the Hat. They were all placed in the low scrubby bushes. Several were usually found in any bush or clump that was occupied. In one case there were seven nests in one cluster. The nests are large masses of well woven twigs. The construction of these nests must have entailed a large amount of labor, considering that they were about three and a half feet across and two feet deep, and twigs, like Winchester in the poem, thirty miles away. The eggs were from two to six in number. They were greenish blue in color and, like the eggs of the pelican, were elliptical in shape, though with comparatively greater diameter.

The herons apparently have the longest nesting period of all the birds living on Hat Island. There were eggs that showed no incubation, incomplete clutches, and young birds that were three-quarters grown, and all the intervening stages.

The young showed no tendency towards sociability either towards each

other or toward strangers. Each brood remained together in the nest apparently until able to fly. They are rather pugnacious in their disposition when approached. They emit a sound that closely resembles the dry "chuck" of the blackbird, while the parent sounds a drawn-out *ah-h-h-h-h*, when the nest is approached. If the stranger goes too close to the nest, the chicks either attempt to retreat, or stand their ground and strike at the intruder, and a sharp click is heard as their mandibles snap together. The young do not belie their reptilian ancestry either in their uncanny long necks and staring eyes, nor in this method of defense by striking. It was a rather impressive aspect that the half-grown herons presented as they stood in stoic, stork-like aspect on their nests, patiently awaiting their usual allowances.

No accurate observations were made of the feeding of the young herons. One instance is perhaps worthy of mention. An adult heron was seen to alight on a rock some rods from a nest of younglings. As the persistent visitor did not leave the vicinity, the bird stood for some time and finally regurgitated what was probably meant to be the afternoon meal of her brood. Upon exam-

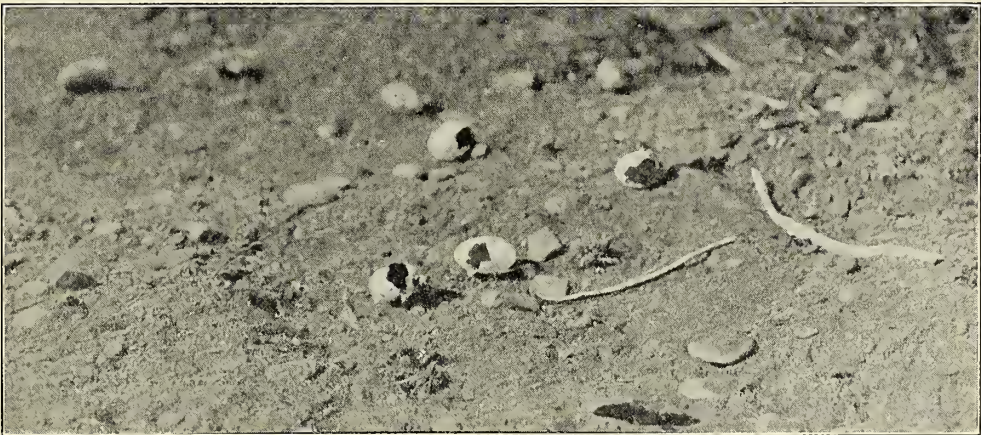


Fig. 39. PELICAN EGGS DESTROYED BY GULLS.

ination of the mass of material disgorged a partially digested fish eight inches long was found, as well as the scales of another fish and other material that could not be identified.

GENERAL HABITS OF THE GULLS, HERONS AND PELICANS.—The easy, graceful, flowing type of flight, as well as the soaring of the gulls, was illustrated in countless examples. This slow waving of the wings in flight seems to correlate exceedingly well with this bird's method in starting flight. It is a fact often observed that the gull seldom if ever perches, but rather alights upon the ground where it procures, in this section of the country, the greater part of its food. When the bird starts flight it opens and beats its wings through small arcs, and runs along the ground to gain momentum for a launch into the air. In other words, the gull normally beats its wings so slowly that it can, only with great difficulty, rise into the air by its wings alone, hence it brings into play its auxiliary organs of locomotion. In alighting it is a matter of some interest to note the position of the wings, which are placed in vertical

planes to enable the birds to come to a stop. In addition to this, it was also observed that the bird would occasionally "back water" when alighting.

The herons, when about to rise into the air, would first squat and then usually, without further ceremony, jump into the air and continue in motion with the long steady strokes of their wings. The pelicans likewise had the habit of squatting and then jumping into the air when starting from the ground. They would often squat and bob up several times when the observer approached as if they were undecided as to whether or not it was necessary for them to go through the exertion of launching and flying off with their corpulent avoirdupois. As a rule, when one or more would start to fly, the whole or the greater part of the colony would follow the example, and the air currents from their powerful wings could be felt fifteen rods away. The roar from such concerted flight could be heard for a mile or more.

Figure 35 shows a characteristic scene portraying how the pelicans and gulls refuse to associate in the same flock. The pelicans are occupying exclusively the end of the spit, while the gulls occupy the part next to the island. The Caspian Terns and the gulls, however, were usually seen in the same flocks.

There is an impression current in bird literature and among bird people that requires some modification in view of the observations of our party; that is, relative to the disposition of the gull. His general reputation is as being a mild and peaceful bird and never aggressive. Our observations not only did not confirm this but were decidedly to the contrary. I have previously made mention of the piratical raids upon the nests of the Caspian Terns. In addition to this we saw hundreds of instances of the wanton destruction of pelican's eggs and young by these marauders. Figure 39 shows only a small part of the destruction of pelican eggs by gulls. The eggs were apparently not taken for food, as the shells were not broken in a way that indicated that the contents had been eaten, and many were merely pecked in one or several places. Many young pelicans had been killed by being pecked and many of the living were badly lacerated about the head, back and tail. Mr. Treganza states that he has observed that on some occasions the pelicans had posted guards over their section of the colony before going on a foraging expedition. This is thought to be done to protect the nests and contents from the incursions of the gulls. The gulls around the main part of their colony were continually fighting among themselves and, upon close observation, a great many were seen to have down in their beaks that was as strong evidence as the proverbial wool between the dog's teeth. It can, however, be said to their credit that but two cases were reported of gulls molesting nests of their own species.

We saw no indications that the gulls ever disturbed any of the nests or eggs or young of the Great Blue Heron. Whether or not this was due to the fact that the gulls feel no antipathy against this species or whether it was in response to the modern slogan of "safety first", I am unable to state. However, in view of the forbidding aspect of the heron and the fact that there are usually several adult representatives in and about the colony, I am personally inclined to the latter view.

A day had been spent on Hat Island, and on the evening of the second day our provisions, sleeping equipment and specimens of eggs and birds were packed and our boat was headed for Egg Island some thirty miles to the east.

For a mile or more we heard the dull booming farewells of the pelicans as they arose in concert, presumably rejoicing at our departure.

During the entire evening, and until darkness settled over the lake, we saw a large number of small flocks of the Wilson Phalarope. In fact, one or two flocks of these birds were always in sight, either swimming in the water or skimming along through the air, occasionally executing that maneuver that resembles the flashing of a scimitar as the whole flock suddenly and in concert changes the course of its flight. The swimming birds were evidently feeding upon refuse floating on the lake, contributed, very probably, largely by Bear River.

We arrived at Egg Island about 3 A. M. after a trip that was for the most part uneventful, so uneventful that practically no headway was made for an hour or so during a calm. Egg Island is a small island about ten rods long and four rods wide, located about a mile and a half west of the north end of Antelope Island. It is simply the eroded remains of a ridge of hills that runs under the water, and is formed by the upturned edges of the very resistant quartzite beds. This island is practically barren of all vegetation. A few gulls were found nesting here, and likewise a few Great Blue Herons. There is nothing to add by way of narrative or description of these birds as they were found on Egg Island, except that the nests of the heron were placed on the ground instead of in bushes as was the case on Hat Island.

The special object of interest and also of our visit to this island was the Double-crested Cormorant (*Phalacrocorax auritus auritus*). Of these there were between five and six hundred individuals on and around the island. The nests of these birds were rather artistic. They are six or seven inches deep and about eighteen inches across, and are composed of sticks of a uniform size carefully woven together and cemented with white excrement resembling lime.

The eggs are a greenish blue in color and vary from three to five in number. The breeding season of this cormorant was the earliest of all the birds that we saw on the trip, and extended over a comparatively long period. This was apparent from the presence of partially completed nests, eggs in all stages of incubation, and young birds fully as large as adults and likely to be able to fly within a short time.

The day, May 17, was very stormy, and in consequence our visit to Egg Island had to be curtailed. In fact, three days were required for the homeward journey; but this is another and very different story.

Pocatello, Idaho, February 10, 1916.

NESTING OF THE TOLMIE WARBLER IN YOSEMITE VALLEY

By MARGARET W. WYTHE

IN THE summer of 1915, responding to the call of the mountains, I spent a few weeks in Yosemite Valley. Arriving there in the early part of June my visit lasted through a large part of the nesting season in the Valley. Hence one of my chief pastimes became the quest for nesting birds.

It was my good fortune to find sixteen nests between June 12 and July 1.

in the immediate neighborhood of our camp, a little distance above Stoneman Bridge and on the bank of the Merced River. The most interesting and also most accessible of these for close observation proved to be a nest of the Tolmie Warbler (*Oporornis tolmiei*), one of the rarer warblers of the region.

On the morning of June 13, while standing close to a clump of blossoming chokecherry, I was attracted by a slight commotion in the thicket, as some small inhabitant beat a hasty retreat. Peering into the brush I discovered a female Tolmie Warbler making off for the opposite side of the thicket. The sudden movements of the bird so close to me aroused my suspicions as to the possibility of a nest in the immediate vicinity. A brief search disclosed the nest with four eggs directly in front of me, and within a foot of where I was standing.

Immediately after this discovery, procuring a tape I took the following measurements. The top of the nest proved to be nine inches above the ground; its depth on the outside was three and a half inches; its outside diameter was three and a half inches; its inner diameter, two and a half inches; and the depth of the cup, two and one-half inches.

The structure was placed between four stalks of the chokecherry, and was supported below by several short twigs growing from the root stock. The materials were not woven around the four upright stalks, although several grass blades passed behind one of them. Materials of which the nest was composed were fine dried grass blades and stems, and several shreds of bark about three-eighths of an inch wide. These latter were woven into the outer part of the structure, where a single oak leaf also lay embedded, whether purposely or by accident, I cannot say. The lining was of fine grasses and a few black horsehairs. Some loose grass blades arched over the top, attached to the nest a little on one side. Later on the two openings thus made by these arching grasses made a sort of entrance and exit, the bird invariably entering on one side and leaving on the other.

There was nothing about this nest to attract attention even at close range. It appeared to be merely a tangle of dead grasses caught at the base of the chokecherry bush and partly hidden by two dead brakes. In fact, although it was placed within three feet of the most frequented path of our camp, we had been passing back and forth a week before discovering it. There were four eggs in the nest at the date of discovery. They were white, thickly spotted about the larger end with lilac-brown spots, these extending around the sides toward the smaller end; a few pencillings of the same color were also found on the larger end. All the time I was making these observations the female Tolmie was hopping about in a perturbed manner at the farther side of the thicket, from six to ten feet away, at times uttering a single low-pitched *tsip*, similar to that of warblers in general.

During the following week only casual visits were made to the Tolmie nest, to keep watch for the hatching of the eggs, as I was not sure about the state of incubation when they were discovered. The female alone brooded. During the week my findings concerning the Tolmie Warbler varied. Sometimes I found the parent bird brooding, other times she was not, and again I made my visits only when I saw her away from the nest, so as to observe the conditions therein without fear of causing her to desert it. On the 18th she was found in the surrounding thickets noticeably more than on previous days, and at one time was known to be off the nest for a continuous period of twenty

minutes. On this particular day, too, the male Tolmie Warbler was frequently seen flitting about in the brush in company with the female. On the 19th, however, conditions were changed, the female again keeping close to the nest most of the time.

The following day I made two unsuccessful attempts at photographing the nest and eggs. While getting ready to make one exposure at a distance of six feet, which was as close as my kodak would allow, the Tolmie seemed to be trying to make up her mind to return to the nest, and I waited quietly to see what would happen. She kept hopping about on the ground nearby, eyeing me closely, and finally perched within six inches of her home, but would come no closer while I was in sight. A few days later, after two of the eggs had hatched, another attempt at photography gave better results.

Repeated visits up to June 23, usually made while the female was absent, showed conditions unchanged. On this date, however, I had an idea that the eggs must surely be ready to hatch, so my first thought in the morning was to visit the nest. As I came near the chokecherry patch I discovered the female hopping about in an oak tree nearby. Gently pushing aside an overhanging branch I looked into the nest and found that, as I had hoped, it held two nestlings, with scarcely a trace of down on them. The motion I had caused in pushing aside the obstructing branch had been felt in the nest, and immediately one of the young birds raised its head and instinctively opened wide its mouth to be fed.

Observation made the following morning discovered the parent bird absent, and the third egg hatched. Growth in the first two birds had been quite perceptible. They were, on this day, about two inches in length and about the same in stretch of wings. They were now scantily covered with down, a patch showing on top of the head, a line down the middle of the back, and a tuft on the wings. A noon visit disclosed the mother bird brooding. She eyed me as I crept slowly closer, and did not leave until I was within a foot and a half. A pushing aside of the overhanging branch to see if the fourth egg was hatched, produced the automatic opening of the three hungry mouths.

The next two days' observations were confined to brief inspections on the morning of June 25 and on the evening of June 26. The two visits showed no marked change in conditions, but brought me to the conclusion that the fourth egg was infertile.

On June 27 I spent an hour during the morning timing the feeding of the three young birds, from a point about twelve feet distant. I found that the female warbler came with food at intervals of from three to five minutes throughout the hour. During this period the male bird came to the nest only once. My place of observation was too far away to warrant any statement concerning the kind of food brought to the young, other than that it consisted of insects.

The condition of the young birds on June 27, the fourth day after the hatching of the first two (the development being practically the same in all three) was as follows. Juvenal feathers had appeared over most of the head, down the center of the back, and on the wings. The eyes of one bird were open. On the following day the eyes of the second bird were open. Disturbance of the branches above the nest produced the usual effect of opened mouths. On this day the male bird was noted, for the second time, bearing

food to the young. On this trip the bird uttered a single *tsip*, this being the only time I heard either parent utter a note in going to or leaving the nest while feeding the young.

June 29 I inspected the nest once during the afternoon. All three young were sleeping, facing in the same direction. Touching the branches did not cause the birds to open their mouths as they had previously done. They merely opened their eyes, now recognizing, I suppose, that this movement was not the same as that produced by the approach of the parent birds with food. Failing to get the birds to open their mouths by this method, I endeavored to imitate the *tsip* of the adult warblers. Two of the young immediately responded by throwing back their heads and gaping to be fed.

The sixth day showed juvenal feathers appearing on the lateral tracts, and tail feathers just beginning to grow out. On the seventh day, June 30, the wing feathers had broken through the sheaths for about one-half an inch. The birds' heads were well covered with feathers, but the sheaths still adhered at the bases. The contour feathers were in a similar condition. The tail feathers did not show any further development.

As the young Tolmies grew, the mother showed increasing uneasiness at the presence of any one near the nest. Until this day she had hopped about in the brush just out of sight when disturbed. Now, however, she dropped to the ground within three feet, and tried to distract attention from the young by slowly raising and lowering her wings, and continually calling in an anxious manner. She also showed growing wariness when feeding the nestlings. On previous occasions I had been able to stand within ten feet while she fed the young, but now she would not go near. With me at a distance of fifteen feet even, she would hop uneasily about. The young, possibly reflecting the attitude of the parent bird, or perhaps merely because they were getting older, began to show signs of fear, and "froze" when the nest was approached or the overhanging branches touched. A further sign of development appeared on the seventh day. For the first time the young birds responded to the parent's approach with food, by uttering a faint hissing noise.

Morning inspection on July 1, the eighth day after hatching of the first two eggs, disclosed the contour feathers and wing feathers well out of the sheaths, while most of the down had disappeared. The feathers of the upper surface were gray while those of the under surface were grayish-buff. Increasing anxiety on the part of the mother Tolmie made it wiser to keep out of sight as long as she was in the neighborhood. In the evening the male Tolmie Warbler was seen at the nest for the third time. The few times that I saw him there leads me to the conclusion that the male assists very little in the duties of rearing the family.

July 2, the ninth day after hatching, the little signs of nervousness which had been exhibited by the young the day before now developed into real fear. They actually cowered when the nest was approached, and partly closed their eyes. The mother Tolmie, too, became exceedingly distressed by our presence. She almost crawled about on the ground, with wings partly spread, and uttering a repeated *tsip*. Early in the afternoon I noted that the wing feathers were entirely fledged on two of the birds, and almost entirely so on the third. The same afternoon, a little later, some one announced that the young Tolmies had left the nest; and both parents were heard calling anxiously and excitedly. Only two of the young were seen in the shrubbery, and a look at the nest dis-

closed the third bird still in it. Desiring to secure a photograph of a young Tolmie Warbler, I hastened for my kodak, and on returning found that the laggard, too, had left the nest. It was found in the grass nearby; but after a short time it fluttered into the bushes where the others had already gone. The noisy demonstration by the parent warblers did not last very long, and after it had subsided nothing more was heard from the Tolmie family except the singing of the male at intervals from the brush around camp.

To sum up the important points I learned in regard to the nesting of this family of Tolmie Warblers: The nest was discovered on June 13, 1915, and at the time of finding contained four, probably fresh, eggs; two eggs were hatched on June 23, eleven days after the discovery of the nest; a third egg hatched on June 24, twelve days after the discovery of the nest; the fourth egg proved infertile; the three young birds left the nest on July 2, nine and eight days, respectively, after hatching.

Oakland, California, February 15, 1916.

SOME DISTRIBUTIONAL NOTES ON CALIFORNIA BIRDS

By H. E. WILDER

IT IS to be expected that Grinnell's most welcome *Distributional List of the Birds of California* will call out numerous records of birds found beyond the limits therein defined. Many of us have withheld notes bearing upon distribution for reasons of diffidence, indifference, or sheer inertia, but most of all for lack of just the knowledge now supplied in the above mentioned publication. Even though such contributions lack elaboration of detail they may still be worth while so far as they go. Several such cases are detailed beyond, as of possible interest in this connection.

Mergus americanus. American Merganser. As there seems to be no record of the nesting of this fish duck in the coast region of northern California, it may be worthy of mention that it occurs at all seasons along the rivers of Humboldt County. The young have often been observed before they were able to fly.

Parabuteo unicinctus harrisi. Harris Hawk. Confirming Mr. Dawson's report of finding this Arizona species common along the Colorado River, I found them in numbers in the river bottom near Palo Verde during the first three days of December, 1902. Like ourselves, they were evidently seeking shelter in the timber from the terrific sand-storm that prevailed, and were sitting all about in the trees. As the wind abated they took wing, and ten to twenty could be counted in the air at a time. Two specimens were taken.

Aquila chrysaetos. Golden Eagle. More common in portions of the humid coast belt north of Marin County than is indicated by the records. It is a source of considerable annoyance on the sheep ranches of Humboldt and Mendocino counties, and I see the birds occasionally within a few miles of the coast.

Aluco pratincola. American Barn Owl. Although not reported heretofore from the coast region north of Marin County, this owl is, nevertheless, rather common in the dairy region of Humboldt County, where moles and gophers for its sustenance abound.

The birds are frequently seen about our home at Carlotta, and when living at Ferndale we observed them about the tower of the town water-tank, where a colony of them lived and made the night hideous with their cries.

Strix occidentalis caurina. Northern Spotted Owl. Rare enough, but hardly limited to the two specimens now in the Museum at Berkeley. On January 11, 1913, I secured a

fine male of this species three miles southeast of Ferndale, Humboldt County. It was sitting in a fir tree, and was discovered while I was looking for a wild cat that the hounds had treed. This, with another specimen taken near Eureka, is in a private collection in that city. In July, 1899, while fishing for trout in Shackleford Creek, near Quartz Valley, Siskiyou County, I saw a Spotted Owl sitting in a maple tree but a few feet above my head. It showed no fear, and could have been secured had I so wished.

Speotyto cunicularia hypogaea. Burrowing Owl. Though according to Grinnell this little owl has not heretofore been recorded from the northwestern coast belt, nor from the interior north of Lake County, it nevertheless is found in suitable localities in Humboldt County. It is occasionally seen in the Mattole and Eel River valleys, and a hunter of my acquaintance shot one in December, 1915, in the sand hills along the ocean below Ferndale. For a year or two we used to see one sitting beside his burrow close to the road, as we drove from Carlotta to Alton.

Sphyrapicus varius daggetti. Sierra Red-breasted Sapsucker. On December 1, 1902, I collected a male sapsucker in the lowlands along the Colorado River near Palo Verde, that is doubtless referable to this species, though not exactly typical. It seems to be the only record from that section.

Calypte anna. Anna Hummingbird. It is rather a surprise to find that this hummer (first reported from Humboldt County by Mrs. C. M. Wilder in 1913) is a regular winter resident in limited numbers. We see them every winter, and this season had a handsome male about our flowers almost daily till a killing frost occurred during the holidays, when it disappeared. A friend living at Ferndale, near the coast, reports seeing one up to this time (February 1).

Tyrannus vociferans. Cassin Kingbird. A kingbird that I take to be *vociferans* is seen occasionally in the Humboldt region in summer, and from the fact that it breeds here is worthy of notice.

Euphagus cyanocephalus. Brewer Blackbird. So far from being "rare in the northwest coast belt", this species is abundant in Humboldt County, being found by the hundred throughout the dairy region. A large flock is almost constantly in sight from my home at Carlotta, and I have seen the birds in numbers as far in the interior as Kuntz, in Trinity County. A few Red-wing Blackbirds, possibly referable to *Agelaius phoeniceus caurinus*, are at times seen with the Brewer Blackbirds.

Carlotta, Humboldt County, California, February 1, 1916.

FROM FIELD AND STUDY

The House Finch in the State of Washington.—The A. O. U. *Check-list of North American Birds* makes no mention of the House Finch (*Carpodacus mexicanus frontalis*) as occurring in the state of Washington, neither can I find any record elsewhere to that effect. While gathering materials for our book, *The Birds of Washington*, neither Mr. Dawson nor myself encountered this species, although it seems probable that it was present in the state to some extent at the time. It is of interest, therefore, to report that this finch is a moderately common resident in certain portions of both Yakima and Benton counties. The only two stations from which I have had the birds recorded are North Yakima, in Yakima County, and Kiona, in Benton County. Both localities are situated on the Yakima River, in what may be considered the Upper Sonoran Zone.

My attention was first called to the subject by Mrs. G. Ross Pike, of North Yakima, who assured me early this year that the House Finches were common residents of that city, nesting in bird boxes and in vines growing against houses. Skins collected by F. R. Decker, of Kiona, and sent to D. E. Brown, of Seattle, were then forwarded for comparison to H. S. Swarth at the Museum of Vertebrate Zoology, Berkeley, California. Mr. Swarth writes me, "The two House Finches are exactly like others from various parts of the range of the species." No specimens were taken at North Yakima, but the nesting habits, song, and description of the birds seem adequate identification, together with the skins from Kiona, which is only about sixty miles distant.—J. H. BOWLES, *Tacoma, Washington.*

Winter Notes from Southern Texas.—

Camplostoma imberbe. Examples of the Beardless Flycatcher were secured on January 22, and February 15, 1916, near the Arroyo Colorado (a salt water estuary thirty miles north of the Rio Grande), in the vicinity of Harlingen, Texas. Attention was directed to all individuals recorded, by the characteristic notes of the species, which may be set down as *whee-e-oop*, often repeated, and distinguishable at a considerable distance. This diminutive bird showed a persistent partiality for the low bushes that constitute the greater portion of the chaparral of the region, never being observed in arborescent growth, although trees grew rather plentifully along the Arroyo, and some large mesquites were scattered through the chaparral proper. This was at variance with my previous experience with the species in Mexico; and it is quite likely that I would have overlooked the bird entirely had its notes not given me the clew. In size, color, and movements, the Beardless Flycatcher bears a superficial resemblance to several other small birds thronging the chaparral during the winter, such as the Verdin, Orange-crowned Warbler, and Ruby-crowned Kinglet.

Sporophila morelleti sharpei. The Seedeater, when surprised and flushed from its feeding station, arises in a manner suggesting a goldfinch (*Astragalinus*), and after a short flight alights, rapidly repeating, for several minutes its short-syllabled "clickety" notes. It was seen near Harlingen on January 13 and on many subsequent dates until my departure from the locality on February 28. It seemed to be fond of the soft seeds of a low grass growing among cat-tails that filled the irrigating canals in places. The cat-tails served as a protection to the grass against foraging cattle, as well as from the light freezes that occasionally visited the region. Of the Seedeaters, adults of both sexes, as well as immature males, were secured. This species has generally been supposed to withdraw southward into Mexico, during the winter months.

Anthus spraguei. Another interesting bird, and found in tolerable numbers during January, and up to February 16. A short distance out of the town of Harlingen there is a field of about twenty acres, formerly under cultivation, but which for a year or more had been allowed to grow up in weeds. This growth had been partially cropped by stock, so that the movements of a small bird walking on the ground could be followed for some distance.

It was within this acreage that most of my records for the Sprague Pipit were made. The Common Pipit (*Anthus rubescens*) was present at times during this period, but the two species were easily distinguished by habits and actions. The Sprague Pipit never assembled in flocks; and the Common Pipit confined itself to recently plowed lands or closely grazed pastures.

Some other species, interesting because of their presence in this locality, are: *Nyctidromus albigollis merrilli*, appeared February 8; *Melospiza melodia melodia*, one taken January 10; *Melospiza georgiana*, several seen January 12; *Peucaea cassini*, numerous after February 16; *Oreospiza chlorura*, several noted February 15; *Lanivireo solitarius solitarius*, one bird taken January 15.—AUSTIN PAUL SMITH, *San Antonio, Texas*.

The Scott Oriole Again at San Diego.—It may be of interest to record the capture of an adult male Scott Oriole (*Icterus parisorum*) in my dooryard in San Diego, February 26, 1916. He was in full song, though a light mist was falling. This is the earliest date at which I have seen this oriole. Birds in general are less common than usual at this season.—FRANK STEPHENS, *San Diego, California*.

Another Record of the Widgeon in the State of Washington.—It may be of interest to put on record a Widgeon (*Mareca penelope*) that was killed on the Nisqually Flats, Thurston County, Washington, on January 15, 1916. The bird, an immature male, was shot by a Mr. Ditz, of South Tacoma, Washington, who very kindly let me have it, and the skin is now in my collection. An interesting feature of this case is that the bird was taken within a few hundred feet of the spot where my other male of this species was taken last year, and within three days of the same day of the month. The first was collected on January 12, 1915, by L. W. Brehm, of Tacoma, Washington, who was also on the flats the day the 1916 bird was taken.—J. H. BOWLES, *Tacoma, Washington*.

Some Raptores of Douglas County, South Dakota.—The following list was made in Douglas County, southeastern South Dakota, in the years of 1909, '10, '11, and '12.

Cathartes aura septentrionalis. Turkey Vulture. I have two autumn records of this species, one of which is for September 8, 1911.

Circus hudsonius. Marsh Hawk. A typical bird of the prairie marshes, and from an economic standpoint, one of the most beneficial birds of the region.

Aquila chrysaetos. Golden Eagle. A fine example of this species was accidentally killed November 11, 1911, by flying against a wire fence, near the town of Delmont.

Falco sparverius. Sparrow Hawk. Probably a rare summer resident; becomes common in September.

Pandion haliaetus carolinensis. Osprey. Occasionally seen in autumn.

Asio wilsonianus. Long-eared Owl. I have but one record, a specimen taken September 24, 1911.

Asio flammeus. Short-eared Owl. Resident. Found in the vicinity of sloughs and marshy hay land.

Cryptoglaux acadica. Saw-whet Owl. A specimen taken at Armour, January 27, 1910.

Otus asio asio. Screech Owl. Three nests of this species were found. Two were in cavities in cottonwood trees, and the third was in a deserted Flicker hole in a telephone pole.

Nyctea nyctea. Snowy Owl. An occasional winter visitant, more common in severe winters. Their favorite resting places are straw stacks.

Speotyto cunicularia hypogaea. Burrowing Owl. Common. Breeds singly or in colonies; a nest examined May 16, 1911, was located in a burrow, about eight feet from the entrance, and contained ten eggs, at different stages of incubation.—ALEX. WALKER, Tillamook, Oregon.

The Broad-tailed Hummingbird in California.—At the present time the Broad-tailed Hummingbird (*Selasphorus platycercus*) is relegated to the list of "species credited to California on unsatisfactory grounds" (Grinnell, Pacific Coast Avifauna, 11, 1915, 184), and properly so, the three alleged occurrences of the species being shown to have been erroneous. Nevertheless the writer is convinced, from reasons that follow, that the species does occur within the state, and that field work in the proper localities would soon demonstrate its presence. During May, 1912, with one assistant, I spent about two weeks in the Inyo Mountains, in pursuit of field work for the Museum of Vertebrate Zoology. This is a high, rugged range separating Owens Valley from the more forbidding desert region to the eastward. We were encamped in Mazourka Canyon, some ten miles from its mouth, a canyon emptying into Owens Valley opposite the town of Independence.

Several times during our stay I was satisfied that I heard the shrill buzz of wings of the male Broad-tailed Hummingbird, but not until our last day at this point was I able to get sight of the bird. This noise is as loud, and quite as characteristic as in the Rufous and Allen hummingbirds, though of a different tone; as far as I know it is absolutely distinctive among North American hummingbirds. Acquaintance with the species in the mountains of Arizona had familiarized me with this flight sound, and also with the fact that the birds are frequently most difficult to see despite their noisy mode of progression. I was not greatly surprised at my failure to catch sight of the hummingbirds which I was satisfied were in Mazourka Canyon, but kept on the alert, and finally had a fleeting glimpse of one. On May 24, as we were breaking camp, a male bird, with shrill buzz of wings, darted in front of me, and poised in the sunlight but a few feet away. Though gone again before I could make a move for a gun, the sight was sufficient to clinch the identification, to my own satisfaction at least, for the green back and top of head, and gleaming red throat, together with the manner of flight, formed an unmistakable combination of characters.

As no specimen was secured it is quite proper that the species remain for the present in the "Hypothetical List". My intention here is to call attention to this occurrence as an incentive to future observers in this region. From faunal and zonal considerations it is to be expected that the species occur in the Inyo Mountains, as well as in other nearby ranges.—H. S. SWARTH, Museum of Vertebrate Zoology, Berkeley, California.

THE CONDOR

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EDITORIAL NOTES AND NEWS

At the regular meeting of the Northern Division of the Cooper Ornithological Club held April 20, 1916, the following resolution was unanimously adopted:

With the death of Professor Wells W. Cooke at Washington on March 30th, America has lost a working ornithologist of foremost rank. His career has been notable for consistent adherence to one line of investigation—the distribution and migration of North American birds. His achievements in this field comprised the diligent collection and classification of vast numbers of facts, and the deliberate and cautious deduction of generalizations from these. The wide recognition of the results of Professor Cooke's work as thoroughly sound, attests to his faithfulness to detail. We can only deplore with sadness the premature termination of a career of further great promise as well as creditable accomplishment.

In view of the above considerations let it be resolved that we, the members of the Cooper Ornithological Club, hereby extend

to the family and intimate friends of the late Professor Cooke our sincerest sympathies.

Mr. Harry S. Swarth, who for the past three years has served as Assistant Director and Zoologist at the Los Angeles Museum of History, Science and Art, has rejoined the staff of the California Museum of Vertebrate Zoology, with which institution he had previously been affiliated from 1908 to 1913. Mr. Swarth resumes the duties of Curator of Birds, which duties involve not only the care of the extensive collections of birds in the Museum of Vertebrate Zoology, but also enquiry into the systematic status of the lesser worked western bird groups.

We have frequent occasion to recommend titles of ornithological books or papers such as can be considered representative of the highest types of ornithology for the use of serious beginning students. It may be of interest to call attention here to some of these examples—not that we believe our judgment final but that the attention of others may thus be called to the matter, and possibly further or different decisions elicited.

Among books which may be properly classed as literature we can think of none pertaining to western North America that has appealed to us more strongly than the late Bradford Torrey's "Field Days in California" (1913). As we know through personal contact, Mr. Torrey was an especially accurate observer, and, gifted as he was with a ready pen and a large knowledge of literature, he was able to make record of his findings in a most attractive and at the same time authoritative way.

As a high type of ornithological research based on field exploration we would hark back a good many years to Stejneger's "Results of Ornithological Explorations in the Commander Islands and Kamtschatka" (1885). In this report we find set forth, not only lists of specimens secured with critical notes on species characters and local distribution, but also a considerable proportion of sound philosophical comment. Particularly noteworthy, and acceptable today in practically every detail, are Stejneger's generalizations in regard to migration in northwestern North America and in Asia. A careful re-examination of this paper has rewarded us with a number of new ideas, or clarified notions we already held.

In the increasingly important field of geographical distribution nothing has yet appeared to supplant in point of interest and thoroughness C. Hart Merriam's "Results of a Biological Survey of Mount Shasta" (1899). There are here marshalled in convincing array data supporting the life-zone concept together with various dependent considerations having to do with distribution in

mountainous portions of the West. Such topics as the effect of slope exposure and deforestation are here for the first time clearly discussed.

Of course, among the multitude of contributions now appearing annually there are very many highly meritorious papers. But the above three would seem to have first set a high standard each of its kind.

The sympathies of the Cooper Club will go out to our fellow member, Mr. W. F. Dean, of Three Rivers, who recently suffered severe losses through a fire at his home. Mr. Dean's extensive egg collection was destroyed, as well as some mounted mammal heads and birds, a large collection of photographs, and many other objects acquired in his years of natural history collecting. In spite of the discouragements of this disaster, however, he expresses the firm intention of once more beginning the building up of another collection along similar lines.

The Club is indebted to Mr. L. E. Wyman for the compiling of the annual membership roster appearing in this issue, an arduous task as those who have labored at it can testify. This list shows a present membership of 7 honorary, 11 life, and 560 active members. It is requested that any mistakes or omissions be promptly reported to the secretary of either division of the Club.

THE CALIFORNIA ASSOCIATED SOCIETIES FOR THE CONSERVATION OF WILD LIFE

Most readers of THE CONDOR are familiar with the story of the organization of the California Associated Societies for the Conservation of Wild Life, and with its activities since its formation. It has taken honorable and active part in two strenuous campaigns for the protection of wild life within California, and has aided and abetted in certain other movements for conservation within the state and elsewhere. Nowhere else, as far as known to the writer, is there another organization like it. Although it has not been in the heat of the battle during the past year, it nevertheless stands as a ready instrumentality, not only to put the quietus on any reactionary legislation which might be proposed, but to assist in any measure, public or private, state or national, which may be deemed desirable. It is fair to say that the organization stands as a large and potentially important item in California's program of preparedness in caring for those natural

resources with which she has been so bountifully endowed.

It should be a matter of interest and pride to members of the Cooper Ornithological Club that the initiative in the original organization and launching of the Associated Societies was taken by this organization. At the present time the following members of the Club are members of the Executive Committee of the conservation organization, of which committee they constitute a majority: William Frederic Badé, President, representing the Sierra Club; Barton Warren Evermann, Vice-president, and Joseph Grinnell, representing the California Academy of Sciences; Charles A. Kofoid, representing the Biological Society of the Pacific; and Tracy I. Storer, Secretary-Treasurer, officially representing the Cooper Club.

According to the letterhead of the Associated Societies the organization exists "To promote an intelligent appreciation of nature, and to establish a wise policy of conservation through education and legislation." Legitimate fields of activity are numerous, and comprise not alone the promotion of desirable legislation affecting wild life in California, but the support of national measures, such as those for the protection of migratory birds, the establishment of additional federal game preserves, the creation of new national parks and the more efficient administration of those now existing, the coördination of the work of the scientific expert and of those responsible for the actual administration of wild life.

I feel sure that the present policy of the organization contemplates the conservation of the scientific collector, though formal expression of this has never been put on record. The obstacles and difficulties which hedge about the activities of the collector are already sufficiently numerous to insure against any appreciable abuse of such privileges as may be accorded him. On the other hand, the first hand acquaintance which he forms with nature is of great value, and often suffices to transform him into a fighting conservationist.

The present writer desires to express his sincere appreciation of the interest and assistance of Cooper Club members so cordially extended during the period of his incumbency as representative of the Cooper Club on the Executive Committee of the Associated Societies. If he might make a suggestion, it would be that Cooper Club members take occasion to mention their interest in the organization and that for

which it stands to their official representative on the Executive Committee, President Tracy I. Storer of the Northern Division. Mr. Storer adds the duties of the Secretary-Treasurership of the Associated Societies to a program already overfull; he will be bearing the brunt of whatever labor is performed; and in the performance of such labor, he will be giving effect to those words which stand among the objects of the Cooper Club itself: "For the conservation of birds and wild-life in general, for the sake of the future."—WALTER P. TAYLOR, *Biological Survey, Washington, D. C.*

PUBLICATIONS REVIEWED

SOME PUBLICATIONS OF THE BUREAU OF BIOLOGICAL SURVEY DURING 1915.

Under the title "Some common birds useful to the farmer"¹ Professor Beal presents a bulletin of general information concerning the relation of our commonest land birds to the agricultural interests. While superseding Farmers Bulletin no. 54, a publication along similar lines of which upwards of half a million copies were distributed, the present paper is somewhat different in style. It is rather broader in treatment, giving more of distribution and general habits, and less of detail concerning food habits. It is to be hoped that this paper will do as much good as its predecessor did in arousing interest and spreading information concerning the value of our native birds.

During the summer of 1914 the Biological Survey, assisted by about two hundred voluntary observers, took a "Preliminary census of the birds of the United States"² by means of sample censuses in different parts of the country. The number of reports was entirely too small and they were unevenly distributed; nevertheless the reports as compiled by Professor Cooke are very interesting. From the relatively larger numbers of birds reported as nesting about dwellings and in cultivated areas, the author surmises that the bird population of the country as a whole could be considerably increased through a wider extension of protection, and by various other means.

¹Some common birds useful to the farmer. By F. E. L. Beal. U. S. Dept. Agric., Farmers' Bull. 630, pp. 1-27, 23 figs. in text. Issued Feb. 13, 1915.

²Preliminary census of the birds of the United States. By W. W. Cooke. U. S. Dept. Agric., Bull. 187, pp. 1-11. Issued Feb. 11, 1915.

Mr. McAtee has now published three papers dealing with food plants suitable for attracting ducks and other Anatidae. His present contribution³ discusses eleven additional groups of water plants of which representatives have been found in duck stomachs. Brief accounts of the life histories and habits of these plants are given, as also instructions for collecting and transporting them.

For several years Great Salt Lake, Utah, has been the seat of a duck disease similar to that reported by Clarke (CONDOR, xv, 1913, pp. 214-226) from a California locality. In the summer of 1914 Mr. Wetmore investigated conditions at the lake and later studied the situation at Tulare and Owens lakes in California. His report⁴ gives a brief history of the disease at and about Great Salt Lake and an account of the investigation. He discusses the various theories which have been put forth to explain the malady, and the means which have been found useful in its control and prevention. An abundance of fresh water seems to be the most efficient agent.

Professor Beal's two papers on the food habits of the Robins and Bluebirds⁵, and of the Thrushes⁶ together give us a concise yet authoritative account of the food of all members of the thrush family (Turdidae) occurring in North America north of Mexico.

As a group these birds are found to be mixed feeders, taking both animal and vegetable materials, but not always in the same proportions. The robins and the Townsend Solitaire are predominantly vegetarian in their food preferences, the latter being notably a berry feeder, while the former in times of scarcity of wild food is found to take considerable quantities of cultivated fruit, as for example olives. The thrushes (genus *Hylocichla*) and the bluebirds, include a much larger proportion of animal material in their food. This is

³Eleven important wild duck foods. By W. L. McAtee. U. S. Dept. Agric., Bull. 205, pp. 1-25, 23 figs. in text. Issued May 20, 1915.

⁴Mortality among waterfowl around Great Salt Lake, Utah. By Alex Wetmore. U. S. Dept. Agric., Bull. 217, pp. 1-10, pls. I-III. Issued May 26, 1915.

⁵Food of the robins and bluebirds of the United States. By F. E. L. Beal. U. S. Dept. Agric., Bull. 171, pp. 1-31, 2 figs. in text. Issued Feb. 5, 1915.

⁶Food habits of the thrushes of the United States. By F. E. L. Beal. U. S. Dept. Agric., Bull. 280, pp. 1-23, 2 figs. in text. Issued Sept. 27, 1915.

largely insects, and for the most part is of species which are now thought to be either noxious or else harmless so far as man's interests are concerned.

A highly commendable feature of these two publications of the Survey is the inclusion of generic and specific determination of the insects wherever possible. Later, as the life histories and economic status of our insects become better known, it will be possible, from these present studies on bird food, to restate the economic value of our birds in terms of the insects upon which they feed.

In "Game laws for 1915"⁷ Messrs. Palmer, Bancroft and Earnshaw present the Survey's sixteenth annual summary of game laws in the United States and Canada. New measures enacted during the year are listed and the more important ones briefly discussed. The federal regulations for the protection of migratory birds are given in full and there are tables, giving for each of the states in the Union and for the provinces of Canada, the open seasons, bag limits, minimum age limits for hunting, license requirements, and a directory of officials from whom state game laws may be obtained. The bulletin is useful in affording up-to-date information for the use of conservationists, and also for showing one stage in the ever changing balance between the hunting interests and the protectionists.

In one of the last papers he wrote, that on "Bird Migration"⁸, Professor Cooke brought together generalizations arrived at by his study of the migration of American birds for more than thirty years. Here are treated such matters as causes of migration, relation of migration to weather and temperature, time, distance, and rates of migration, different kinds of migration routes, relation of migration to other activities in the life of birds, casualties during migration, and evolution of migration routes. Each topic is discussed upon the basis of evidence drawn from the vast array of such material accumulated during the lifetime of the author. Numerous text figures (maps) are illustrative of the various phenomena discussed. Altogether this paper appeals to the reviewer as about the best thing of its kind which has appeared anywhere. We can only regret that it is not ten times as large, that we might have learned more of this

⁷Game Laws for 1915. By T. S. Palmer, W. F. Bancroft and F. L. Earnshaw. U. S. Dept. Agric., Farmers' Bull. 692, pp. 1-64, 4 figs. in text. Issued Sept. 14, 1915.

⁸Bird Migration. By Wells W. Cooke. U. S. Dept. Agric., Bull. 185, pp. 1-47, pls. I-IV, 20 figs. in text. Issued April 17, 1915.

fascinating subject from one who was qualified to speak with such authority upon it.—
TRACY I. STORER.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Academy of Sciences in Golden Gate Park, San Francisco, March 16, 1916, with an attendance of thirty-three. The minutes of the February meeting were read and approved, and the minutes of the Southern Division and of the Inter-Mountain Chapter for February were also read.

Mrs. Nellie Knappen was elected to membership in the Club, and the following names were proposed: Pirie Davidson, San Rafael, Calif., proposed by Mr. Tracy I. Storer; Dr. Frank B. Davis, 401 Vernon St., Oakland, by Mrs. Edward A. Kluegel; E. N. Hart, 940 Pacific Ave., Alameda, by Harold E. Hansen; S. Griswold Morley, 2535 Etna St., Berkeley, by Dr. J. Grinnell; Webster Robinson, Los Angeles, by Mr. Swarth; Norman H. Wood, Ann Arbor, Mich., and Donald D. McLean, Coulterville, Calif., by W. Lee Chambers; Edmund C. Jaeger, Palm Springs, Calif., by C. O. Esterly; and Edward Howe Forbush, Boston, Mass., by W. Leon Dawson.

Mr. Storer presented to the Club the contents of a letter from Mr. Albert Barrows, Secretary of the Pacific Division of the American Association for the Advancement of Science, asking the Cooper Club to present a program at a meeting of the Association to be held in San Diego, August 9 to 12. Mr. Harold Bryant was appointed by the President to prepare a program for this occasion.

Dr. Barton W. Evermann then gave a most interesting report of an intensive study of the physical and the biological conditions of Lake Maxinkuckee, Indiana, showing the conditions and inter-relations of the different kinds of life found to exist in and about the lake. Adjourned.—AMELIA S. ALLEN, Secretary.

SOUTHERN DIVISION

FEBRUARY.—Regular meeting of the Southern Division of the Cooper Ornithological Club was held at the Museum of History, Science and Art, Thursday evening, February 24, 1916, with thirty-three members and visitors in attendance.

In the absence of Mr. Swarth, President Law appointed L. E. Wyman secretary

pro tem. On motion of Mr. Robertson the members voted to hold election of officers before considering other business matters. Mr. Daggett moved that the acting Secretary be instructed to cast the affirmative vote of the club for officers for the ensuing year as follows: President, Dr. L. H. Miller; Vice-President, J. Eugene Law; Secretary, L. E. Wyman. Motion carried. Nominees declared elected and immediately assumed office.

Minutes of the December meeting were read and approved, followed by reading of the minutes of the January meeting of the Northern Division, and of minutes of both December and January meetings of the Inter-Mountain Chapter.

New members were elected as follows: S. Harrison Eaton, North Bend, Ohio; Geo. L. Fordyce, Youngstown, Ohio; H. H. Cleaves, New Brighton, N. Y.; Norman DeWitt Betts, Madison, Wis.; A. H. Vilas, Santa Barbara, Calif.; and Thomas Stevenson Bradlee, Boston, Mass. New names presented, to be voted on at the March meeting: Webster Robinson, Los Angeles, by Mr. Swarth; Norman H. Wood, Ann Arbor, Mich., and Donald D. McLean, Coulterville, Calif., by W. Lee Chambers; Curtis Wright, Jr., Berkeley, Calif., and H. W. Daniels, Claremont, Calif., by H. C. Bryant; Edna A. Hannibal, San Jose, Calif., by J. O. Snyder; Harold E. Hansen, San Francisco, Calif., by Tracy I. Storer; Edmund C. Jaeger, Palm Springs, Calif., by C. O. Esterly; and Edward Howe Forbush, Boston, Mass., by W. Leon Dawson.

The Business Managers' report for 1915 was submitted, but owing to the lateness of the hour it was held over for reading and consideration at the next meeting.

Pres. Miller reported receipt of a letter relative to the resignation of Dr. W. P. Taylor as Cooper Club representative on the Executive Committee of the California Associated Societies for the Conservation of Wild Life. On motion of Mr. Law, seconded by Mr. Robertson, it was voted that Mr. Tracy I. Storer be appointed to fill the vacancy. Motion carried.

There being no further business the members and visitors listened to an interesting and instructive talk by Mr. W. Leon Dawson on the "Testimony of the Egg and the Task of Comparative Oology." Mr. Dawson presented in a clear and forceful manner numerous scientific angles of Oology which are unknown to the average collector and unfamiliar to many of those more advanced in this science. Adjourned.—L. E. WYMAN, *Secretary*.

INTER-MOUNTAIN CHAPTER

The Inter-Mountain Chapter of the Cooper Ornithological Club, met at Salt Lake City, Utah, March 8, 1916, in the office of Dr. D. Moore Lindsay, Boston Building. Meeting opened at 8:30 P. M., President Chambers in the chair. Members in attendance were: A. D. Boyle, Prof. J. H. Paul, J. Sugden, Jr., Mr. and Mrs. J. A. Mullen, Mr. and Mrs. A. O. Treganza, and four visitors. Minutes of the February meeting read and approved.

A letter was read by the Secretary relative to development of National Parks, specifically Yosemite. Motion was made by Dr. Lindsay, seconded by Prof. Paul, that the Secretary be authorized to write Senators Sutherland and Smoot and Congressmen Mays and Howell recommending this motion. President Chambers gave a brief summary of the mortality of bird life in different counties of the State owing to the severe winter, and the method of feeding the wild birds. Recommendation was made to formally ratify and endorse the Game Commissioner's work in restricting the cat and establishing bird sanctuaries. Recommendation was made that an educational leaflet be prepared for publication by the State Department of Agriculture, special reference to be made to bird protection and season and flight of migratory birds.

Motion was made, seconded by Dr. Lindsay, that the President be authorized to ask assistance from Boy Scouts relative to protection and violation of game laws. A. D. Boyle was appointed to lay the matter before the Scout Masters. Suggestion was made that the Secretary write Dr. Plummer relative to cats as bird destroyers; also notify C. Barnes to assist on publicity work. Motion was made that a special meeting be held for March 15th. Meeting adjourned 10:00 P. M.—MRS. A. O. TREGANZA, *Secretary*.

An informal meeting was held March 15 with President Chambers in the chair. Eleven members and ten visitors were in attendance. The subject under discussion was Bird Migration. Mrs. Treganza read from Wells W. Cooke's "Bird Migration". President Chambers spoke of the Salt Lake Valley as lying within an important migration route, recounting many species noted. Three specimens of Avocet were brought in. An informal discussion followed. Meeting adjourned at 10:00 P. M.—MRS. A. O. TREGANZA, *Secretary*.

DIRECTORY OF MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB

Revised to May 1, 1916

(Residence in California unless otherwise stated. Year following address indicates date of election. Star preceding name indicates life member.)

HONORARY MEMBERS

- Allen, Dr. J. A., American Museum Natural History, New York City. 1910.
Beal, Prof. F. E. L., Biological Survey, Dept. Agriculture, Washington, D. C. 1910.
Belding, Lyman, Stockton. 1896.
Henshaw, H. W., Biological Survey, Dept. Agriculture, Washington, D. C. 1909.
Merriam, Dr. C. Hart, 1919 16th St., Washington, D. C. 1909.
Ridgway, Robert, 3306 New Hampshire Ave., N. W., Washington, D. C. 1905.
Stephens, Frank, 3746 Park Blvd., San Diego. 1912.

ACTIVE MEMBERS

- Adam, Frederick, 603 Vassar St., Tropico. 1914.
Adams, Ernest, Carlotta, Humboldt Co. 1896.
Alexander, Annie M., 92 Seaview Ave., Piedmont. 1908.
Alkire, W. H., 1756 Edgemont St., Hollywood. 1914.
Allen, Amelia S., Mosswood Road, Berkeley. 1913.
Allen, Arthur A., McGraw Hall, Ithaca, N. Y. 1911.
Anderson, Ernest M., 2524 Asquith St., Victoria, B. C., Canada. 1915.
Anderson, Malcolm P., 2721 Buena Vista Ave., Alameda. 1901.
Andrews, Edna A., 2233 Ellsworth St., Berkeley. 1914.
Appleton, J. S., Simi, Ventura Co. 1901.
Armstrong, Edward E., 207 No. Michigan Ave., Chicago, Ill. 1914.
Arnold, E., Freight Claim Agent, Grand Trunk Ry., Montreal, Quebec, Canada. 1909.
Arnold, Ralph, 917 Union Oil Bldg., Los Angeles. 1893.
Arnold, W. W., 504 No. Nevada Ave., Colorado Springs, Colo. 1911.

- Atkinson, W. L., 35 Hawthorne Way, San Jose. 1901.
Atsatt, Sarah R., 345 So. Serrano Ave., Los Angeles. 1911.
Atterbury, Lydia, 2620 LeConte Ave., Berkeley. 1915.
Averill, E. F., Pendleton, Oregon. 1914.
Badé, Wm. F., 2223 Atherton St., Berkeley. 1903.
Badger, M. C., Santa Paula. 1915.
Bagley, J., Box 46, Eureka. 1913.
Bailey, Bernard, R.D.1, Elk River, Minn. 1911.
Bailey, Florence M., 1834 Kalorama Road, Washington, D. C. 1910.
Bailey, Henry F., 94 Pacific Ave., Santa Cruz. 1914.
Bailey, H. H., Box 154, Newport News, Va. 1903.
Bailey, Vernon, 1834 Kalorama Road, Washington, D. C. 1904.
Bales, Dr. B. R., 151 W. Main St., Circleville, O. 1906.
Bangs, Outram, Museum of Comparative Zoology, Cambridge, Mass. 1906.
Barker, Fred, Parkers Pairie, Minn. 1914.
Barnes, Claude T., 359 10th Ave., Salt Lake City, Utah. 1915.
Barnes, R. Magoon, Lacon, Ill. 1908.
Barrows, Albert L., 1430 Arch St., Berkeley. 1912.
Barrows, Prof. Walter B., Box 185, East Lansing, Mich. 1909.
Batchelder, Chas. F., 7 Kirkland St., Cambridge, Mass. 1910.
Baynard, Oscar E., Clearwater, Fla. 1911.
Beck, Rollo H., R. D. 21, San Jose. 1894.
Bell, W. B., Agricultural College, N. D. 1912.
Bennett, R. H., Room 409, 444 Market St., San Francisco. 1909.
Bent, A. C., Taunton, Mass. 1909.
Bentley, Georgia, Currant, Nye Co., Nev. 1916.
Benton, Ralph, 2074 W. 27th St., Los Angeles. 1915.
Betts, Norman DeWitt, Linwood, Uintah Co., Utah. 1916.
Bicknell, Mrs. F. T., 319 S. Normandie Ave., Los Angeles. 1913.
Bigelow, Homer L., Old Orchard Road, Chestnut Hill, Mass. 1910.
Bishop, Louis B., 356 Orange St., New Haven, Conn. 1904.
Black, Chas. N., 58 Sutter St., San Francisco. 1916.
Blain, Merrill W., 1026 No. Coronado St., Los Angeles. 1909.

- Blanchard, Augusta H., 246 Perry St., Oakland. 1916.
- Blayne, Nita A., 920 O St., Fresno. 1911.
- Boeing, W. E., 1100 Hoge Bldg., Seattle, Wash. 1914.
- Bohlman, Herman T., 202 Occident St., Portland, Ore. 1903.
- Bolander, L. P., 2517 21st Ave., Oakland. 1907.
- Bolt, Ben. F., 1421 Prospect Ave., Kansas City, Mo. 1916.
- Bowdish, B. S., Demarest, N. J. 1910.
- Bowditch, Charlotte, 2227 Upper Garden St., Santa Barbara. 1914.
- Bowles, J. H., The Woodstock, Tacoma, Wash. 1903.
- Boyle, Ashby D., 3511 5th Ave., Salt Lake City, Utah. 1915.
- *Bradbury, W. C., 1440 Race St., Denver, Colo. 1913.
- Bradlee, Thos. H., San Ysidro Cottages, R. F. D. 1, Santa Barbara. 1916.
- Braislin, Wm. C., M. D., 556 Washington Ave., Brooklyn, N. Y. 1910.
- Brandt, H. W., 2025 E. 88th St., Cleveland, O. 1914.
- Brant, C. A., El Tovar, Grand Canyon, Ariz. 1914.
- Brewster, William, 145 Brattle St., Cambridge, Mass. 1904.
- Brooks, Allan, Okanagan Landing, B. C., Canada. 1906.
- Brooks, L., Box 338, New Bedford, Mass. 1913.
- Brouse, W. A., 3623 5th Ave., Los Angeles. 1916.
- Brown, D. E., 2542 Beacon Ave., Seattle, Wash. 1909.
- Brown, Edward J., 1733 Fourth Ave., Los Angeles. 1915.
- Brown, Mrs. Herbert, 233 N. Court St., Tucson, Ariz. 1914.
- Brown, Wm. J., 250 Oliver St., Westmount, Quebec, Canada. 1911.
- Brown, W. W., Jr., 543 Ocean Ave., Long Beach. 1909.
- Bryant, Mrs. Amy M., 2533 Hill Court, Berkeley. 1914.
- Bryant, Harold C., Museum Vertebrate Zoology, Univ. of Calif., Berkeley. 1910.
- Burnett, W. L., Box 691, Ft. Collins, Colo. 1910.
- Burnham, Dr. Clark, Bushnell Place, Berkeley. 1907.
- Burnham, Mrs. Clark, Bushnell Place, Berkeley. 1907.
- Burns, Frank L., Berwyn, Pa. 1909.
- Burtch, Verdi, Branchport, N. Y. 1910.
- Buturlin, Sergius A., Wesenberg, Esthonia, Russia. 1909.
- Caduc, Eugene E., 512 Massachusetts Ave., Boston, Mass. 1911.
- Camp, Chas. L., Museum Vertebrate Zoology, Univ. of Calif., Berkeley. 1909.
- Cantwell, Geo. G., Puyallup, Washington. 1915.
- Carpenter, Nelson K., Box 127, Escondido. 1901.
- Carriger, Henry W., 5185 Trask Ave., Oakland. 1895.
- Carriker, M. A., Jr., Cincinnati Coffee Co., Santa Marta, Colombia, S. A. 1911.
- Case, Rev. B. F., Tolland, Conn. 1913.
- Case, C. M., 7 Holcomb St., Hartford, Conn. 1911.
- Chamberlain, C. W., 36 Lincoln St., Boston, Mass. 1912.
- Chamberlain, W. J., Corvallis, Oregon. 1907.
- Chambers, Fred W., 701 Walker Bank Bldg., Salt Lake City, Utah. 1915.
- Chambers, W. Lee, Eagle Rock. 1897.
- Chapman, Frank M., American Museum Natural History, New York City. 1903.
- Cheesman, M. R., R. D. 3, Box 61, Murray, Utah. 1915.
- *Childs, John Lewis, Floral Park, N. Y. 1904.
- Clark, Eugene P., 9 St. James Park, Los Angeles. 1915.
- Clark, Josiah H., 238 Broadway, Paterson, N. J. 1910.
- Clay, C. Irvin, Box 353, Eureka. 1910.
- Cleaves, H. H., New Brighton, N. Y. 1916.
- Clifton, H. T., 509 E. Walnut St., Pasadena. 1904.
- Coale, Henry K., Highland Park, Ill. 1907.
- Coffin, Sherwood, 35 Second St., San Francisco. 1911.
- Coggins, Herbert L., 2929 Piedmont Ave., Berkeley. 1910.
- *Colburn, A. E., 806 S. Broadway, Los Angeles. 1905.
- Conger, Dorothy, Recreation, Ore. 1914.
- Cookman, Alfred, 1340 Exposition Blvd., Los Angeles, 1912.
- Cooper, James S., 827 54th St., Oakland. 1903.
- Cox, H. E., care Redondo Hardware Co., Redondo. 1916.
- Crane, Ada Ethel, 806 Santa Barbara Road, Berkeley. 1914.
- Crane, Alice F., 314 Cherry St., San Francisco. 1916.
- Craven, Jesse T., 811 Roosevelt Ave., Detroit, Mich. 1909.
- Crosby, Maunsell S., Grasmere Farms, Rhinebeck, N. Y. 1911.
- Culp, Chas. H., Pacific Grove. 1914.

- Culver, Susan B., 2908 Channing Way, Berkeley. 1914.
- Cummings, Byron, Univ. of Arizona, Tucson, Ariz. 1916.
- Currier, Ed. S., 416 E. Chicago St., St. Johns, Multnomah Co., Ore. 1904.
- Daggett, Frank S., 2637 Romeo St., Los Angeles. 1895.
- Daniels, H. W., 312 Mountain Ave., Piedmont. 1916.
- Darlington, E. J., 2301 Monroe St., Wilmington, Del. 1911.
- Davenport, Mrs. Elizabeth B., Northern Ave., Brattleboro, Vt. 1911.
- Davidson, Cassie A., 1525 LeRoy Ave., Berkeley. 1915.
- Davis, Evan, 339 E. Palmyra Ave., Orange. 1894.
- Davis, J. M., 811 O St., Eureka. 1908.
- *Dawson, W. Leon, R. D. 3, Box 83, Santa Barbara. 1906.
- Day, Chester S., 15 Chilton Road, W. Roxbury, Mass. 1910.
- Dean, W. F., Three Rivers. 1901.
- Deane, Ruthven, 112 W. Adams St., Chicago, Ill. 1904.
- Deane, Walter, 29 Brewster St., Cambridge, Mass. 1907.
- Dear, Lionel S., Box 456, Ft. William, Ontario, Canada. 1914.
- Dearborn, Ned, Linden, Maryland. 1909.
- Decker, F. R., Box 201, Prosser, Wash. 1913.
- DeGroat, Dudley S., 120 Edgewood Ave., San Francisco. 1916.
- Dice, Lee R., care Agricultural College, Manhattan, Kas. 1914.
- Dickenson, A. B., 2328½ N. Main St., Los Angeles. 1916.
- *Dickey, Donald R., Box 701, Pasadena. 1910.
- Dickey, Samuel S., 31 S. West St., Waynesburg, Pa. 1911.
- Dille, F. M., 2927 W. 28th Ave. Denver, Colo. 1903.
- Dixon, Joseph, Museum Vertebrate Zoology, Univ. Calif., Berkeley. 1904.
- Dodge, Laura I., 3031 Eliot St., Long Beach. 1915.
- Dodge, Ralph E., 546 Bay St., Santa Cruz. 1915.
- Dolbear, Katherine E., Berkeley Inn, Berkeley. 1915.
- Douglas, J. S., Bin 7, Bakersfield. 1911.
- Drachman, Myra, 3031 Eliot St., Long Beach. 1915.
- DuBois, Alexander Dawes, Dutton, Mont. 1911.
- Dunbar, W. Linfred, care Remington-U. M. C. Arms Co., Bridgeport, Conn. 1911.
- Duprey, H. F., Dixon. 1907.
- Durfee, Owen, Box 125, Fall River, Mass. 1911.
- Dutcher, William, 990 Central Ave., Plainfield, N. J. 1905.
- Dutton, P. C., 26 Litchfield Road, Stone Staffs, England. 1913.
- Dwight, Dr. Jonathan, Jr., 134 W. 71st St., New York City. 1904.
- Earle, Eleanor P., Palma Sola, Manatee Co., Fla. 1911.
- Eastman, Lieut. F. B., Plattsburg Barracks, N. Y. 1904.
- Eaton, S. Harrison, Malcolm Hotel, Lawrenceville, Ill. 1916.
- Edson, J. M., Marietta Road, Bellingham, Wash. 1911.
- Edwards, H. Arden, Box 312, Claremont. 1913.
- Eggleston, J. W., 239 Williams St., New London, Conn. 1913.
- Emmons, R. A., Biological Survey, Dept. Agriculture, Washington, D. C. 1914.
- Enoch, Wade L., E. Bakersfield. 1915.
- Esterly, C. O., Occidental College, Los Angeles. 1908.
- Everett, E. E., Ventura. 1913.
- Evermann, Barton W., Calif. Academy Sciences, San Francisco. 1911.
- Fargo, Mrs. Minerva J., 1632 N. Kingsley Drive, Los Angeles. 1914.
- Fawcett, F. H., Narrows, Harney Co., Oregon. 1912.
- Felton, Mrs. C. N., 2335 Pacific Ave., San Francisco. 1916.
- Ferguson, Mrs. Mary Van E., 5 Panoramic Way, Berkeley. 1915.
- Finley, Wm. L., 651 E. Madison St., Portland, Ore. 1900.
- Fischer, E. J., 525 W. 57th St., Los Angeles. 1910.
- Fisher, Dr. A. K., Biological Survey, Dept. Agriculture, Washington, D. C. 1904.
- Fisher, Elizabeth W., 2222 Spruce St., Philadelphia, Pa. 1910.
- Fisher, Walter K., 1525 Waverly St., Palo Alto. 1900.
- Fitzpatrick, T. J., Bethany, Neb. 1913.
- Flanagan, John H., 89 Power St., Providence, R. I. 1904.
- Fleming, J. H., 267 Rusholme Road, Toronto, Ontario, Canada. 1910.
- Flint, Wm. R., 244 N. Madison Ave., Pasadena. 1912.
- Forbush, E. H., State House, Boston, Mass. 1916.
- Ford, Prof. W. A., Box 23, Umatilla, Ore. 1915.
- Fordyce, Geo. L., 40 Lincoln Ave., Youngstown, O. 1916.

- Forrest, E. R., 261 Locust Ave., Washington, Pa. 1910.
- Fortiner, J. C., Brawley. 1910.
- Fowler, Frederick H., 221 Kingsley Ave., Palo Alto. 1901.
- Fuertes, Louis A., Cornell Heights, Ithaca, N. Y. 1904.
- Gane, Henry S., R. D. 3, Santa Barbara. 1903.
- Gardner, Leon L., Claremont. 1911.
- Garlough, F. E., Gladstone, Ore. 1915.
- Gault, Benj. T., Glen Ellyn, Ill. 1905.
- Gay, Harold S., 200 S. Wilson Ave, Alhambra. 1901.
- Gay, Melvin R., 1495 W. Adams St., Los Angeles. 1914.
- Gay, Mrs. Sophie E., Red Bluff. 1916.
- Germain, Claire, 3906 W. First St., Los Angeles. 1915.
- Gillette, Thurlow T., 982 Worcester St., Pasadena. 1915.
- Gilman, M. French, Ft. Bidwell, Modoc Co. 1901.
- Goelitz, Walter A., 1622 Judson Ave., Ravinia, Ill. 1915.
- Goethe, C. M., 2615 K St., Sacramento. 1915.
- Goldman, E. A., Biological Survey, Dept. Agriculture, Washington, D. C. 1901.
- Goldman, Luther J., 2418 Prince St., Berkeley. 1902.
- Goodcell, Mrs. Marion L., 864 D St., San Bernardino. 1914.
- Goodwin, Rev. S. H., Box 284, Provo, Utah. 1910.
- Gould, Joseph E., Box 96, Arcadia, Fla. 1909.
- Grant, Adele Lewis, Columbia, Tuolumne Co. 1915.
- Grant, U. S., 4th, 43 Westmorely Court, Cambridge, Mass. 1909.
- Granville, Fred, 424 N. Rosemont Ave., Los Angeles. 1911.
- Grey, Henry, R. D. 2, Box 154 A, San Diego. 1901.
- Grinnell, Geo. Bird, 238 E. 15th St., New York City. 1914.
- Grinnell, Mrs. Hilda Wood, 2811 College Ave., Berkeley. 1912.
- Grinnell, Joseph, Museum Vertebrate Zoology, Univ. Calif., Berkeley. 1894.
- Guion, Geo. Seth, Napoleonville, La. 1911.
- Gunn, Amy E., Mill Valley. 1914.
- Hall, Carlotta C., 1615 La Loma Ave., Berkeley. 1915.
- Halliday, Daniel S., 729 Central Bldg., Los Angeles. 1910.
- Hanford, Forrest, 3825 Division St., Oakland. 1912.
- Hann, H. H., Parkdale, Ore. 1909.
- Hanna, Wilson C., 1000 Pennsylvania Ave., Colton. 1902.
- Hannibal, Edna A., Stanford University, Palo Alto. 1915.
- Hanson, Harold E., 870 43rd Ave., San Francisco. 1916.
- Haring, Mrs. C. M., 2801 Russell St., Berkeley. 1915.
- Harmon, Mrs. Frances M., 2115 Estrella Ave., Los Angeles. 1912.
- Harris, Harry, Cashier, Post Office, Kansas City, Mo. 1914.
- Hathaway, Harry S., Box 1466, Providence, R. I. 1912.
- Hazard, R. G., Peace Dale, R. I. 1909.
- Head, Miss Anna, 2730 Belrose Ave., Berkeley. 1912.
- Hegner, Carl D., 810 Avaco St., Los Angeles. 1914.
- Heinemann, Oluf J., 1664 Grove St., San Francisco. 1908.
- Heller, Edmund, U. S. National Museum, Washington, D. C. 1894.
- Helme, Arthur H., Miller Place, Suffolk Co., N. Y. 1911.
- Henderson, Junius, Box 398, Boulder, Colo. 1909.
- Henshaw, Judge F. W., Supreme Court, San Francisco. 1915.
- Hersey, F. Seymour, 6 Maple Ave., Taunton, Mass. 1915.
- Hersey, L. J., Wray, Colo. 1909.
- Hoag, Mrs. G. B., Waterman. 1916.
- Hodge, C. F., University of Oregon, Eugene, Ore. 1914.
- Holland, Harold M., 320 S. Gramercy Place, Los Angeles. 1901.
- Holman, F. C., 558 Lincoln Ave., Palo Alto. 1914.
- Hoover, Theodore J., 65 Addison Road, London, W., England. 1898.
- Horsfall, R. Bruce, 1457 E. 18th St., Portland, Ore. 1914.
- Howard O. W., Box 484, Los Angeles. 1895.
- *Howell, Alfred B., Covina. 1908.
- Howell, B. F., Jr., 52 Patton Ave., Princeton, N. J. 1909.
- Howes, Paul G., 91 Hope St., Stamford, Conn. 1910.
- Howsley, L. B., Culver, Oregon. 1909.
- Hubbard, Samuel, Jr., 244 Montecito Ave., Oakland. 1912.
- Hubbs, Carl L., Stanford University. 1910.
- Huber, Wharton, Gwynedd Valley, Pa. 1915.
- *Huey, Laurence, 32nd St. & Clay Ave., San Diego. 1909.
- Hunt, E. B., 4318 14th St., N. W., Washington, D. C. 1914.

- Hunter, J. S., Union Hotel, San Mateo. 1903.
- Husher, Mrs. Gertrude H., 1495 W. Adams St., Los Angeles. 1913.
- Hussey, Roland F., 1308 E. Ann St., Ann Arbor, Mich. 1916.
- Illingsworth, J. F., College of Hawaii, Honolulu, H. T. 1896.
- Ingersoll, A. M., 908 F St., San Diego. 1895.
- Isham, C. Bradley, 27 W. 67th St., New York City. 1909.
- Jackson, Thos. H., 304 N. Franklin St., West Chester, Pa. 1911.
- Jacobs, J. Warren, 404 S. Washington St., Waynesburg, Pa. 1909.
- Jacobson, W. C., 2221 McK'nley Ave., Berkeley. 1916.
- Jaeger, Edmund C., Palm Springs. 1916.
- Jay, Alphonse, 1622 Pennsylvania Ave., Los Angeles. 1901.
- Jay, Antonin, 1622 Pennsylvania Ave., Los Angeles. 1901.
- Jenkins, Ida G., 30 Dearborn St., Roxbury, Mass. 1914.
- Jeremy, Ella, 1341 Browning Ave., Salt Lake City, Utah. 1916.
- Jessee, Dr. R. L., Philo., Ill. 1909.
- Jewett, R. D., 1238 S. Serrano St., Los Angeles. 1912.
- Jewett, Stanley G., 582 Bidwell Ave., Portland, Ore. 1909.
- Job, Herbert K., 291 Main St., West Haven, Conn. 1915.
- Johnson, Frank E., 16 Amackassin Terrace, Yonkers, N. Y. 1911.
- Johnson, John C., Room 421 Y. M. C. A., Berkeley. 1914.
- Johnson, Myrtle E., National City. 1908.
- Jonas, Coloman, 1023 Broadway, Denver, Colo. 1910.
- Jones, Lynds, Museum Oberlin College, Oberlin, O. 1911.
- Jordan, A. H. B., Everett, Wash. 1911.
- Jordan, Dr. David Starr, Stanford University. 1902.
- Judson, W. B., 826 Washington Bldg., Los Angeles. 1894.
- Julien, Lillian M., Yreka, Siskiyou Co. 1901.
- Kaeding, Geo. L., Battle Mountain, Nev. 1903.
- Kellogg, Louise, Box 371 Suisun. 1911.
- Kellogg, Prof. Vernon L., Stanford University. 1901.
- Kendall, J. N., Botany Bldg., Univ. of Calif., Berkeley. 1915.
- Kennard, Frederic H., Dudley Road, Newton Centre, Mass. 1911.
- Kennedy, C. H., Cornell University, Ithaca, N. Y. 1912.
- Kermode, F., Provincial Museum, Victoria, British Columbia, Canada. 1911.
- Keyes, Prof. Chas. R., Mt. Vernon, Ia. 1900.
- Kimball, H. H., Long Beach. 1909.
- King, Harold L., Box 92, Searchlight, Nev. 1915.
- King, Hazel, 1898 Broadway, San Francisco. 1914.
- Kittredge, Joseph, Jr., U. S. Forest Service, Missoula, Mont. 1915.
- Knuegel, Mrs. Edward A., 2623 LeConte Ave., Berkeley. 1916.
- Knickerbocker, Chas. K., 445 N. Sacramento Ave., Carpenter Sta., Chicago, Ill. 1905.
- Knowlton, Dr. F. H., U. S. National Museum, Washington, D. C. 1910.
- Kofoid, Prof. C. A., 2616 Etna St., Berkeley. 1909.
- Kohler, Louis S., 98 Watsessing Ave., Bloomfield, N. J. 1909.
- Kretzman, Prof. P. E., 1230 St. Anthony Ave., Concordia College, St. Paul, Minn. 1914.
- Kuser, John D., Bernardsville, N. J. 1912.
- Labarthe, Jules, Hobart Bldg., San Francisco. 1914.
- Lamb, Chester C., 2423 S. Grand Ave., Los Angeles. 1899.
- Lancashire, Mrs. J. H., Manchester, Mass. 1911.
- Lane, Geo. W., Morgan Hill. 1914.
- *Law, J. Eugene, Hollywood. 1900.
- Law, Mrs. J. Eugene, Hollywood. 1915.
- Layne, J. Gregg, 232 S. Spring St., Los Angeles. 1912.
- Leland, H. J., Court House, Los Angeles. 1897.
- Leopold, Aldo, care Forest Service, Albuquerque, N. M. 1916.
- Libby, Gretchen L., 1525 Santa Barbara St., Santa Barbara. 1911.
- Ligon, J. Stokely, Chloride, N. M. 1914.
- Liliencrantz, H. T., Rancho Las Cimas, Hollister. 1916.
- Lindsay, D. Moore, 808 Boston Bldg., Salt Lake City, Utah. 1915.
- Lings, G. H., 208 Piermont Ave., Nyack, N. Y. 1913.
- Linton, C. B., 125 W. Ocean Ave., Long Beach. 1906.
- Litsey, John B., Jr., 1722 Alston Ave., Fort Worth, Tex. 1911.
- Little, Miss Etta V., 413 E. Hadley St., Whittier. 1914.
- Little, Luther, Sierra Madre. 1914.
- Littlejohn, Chase, Redwood City. 1901.
- Loomis, Leverett M., Calif. Academy Sciences, San Francisco. 1902.
- Loring, J. Alden, Owego, Tioga Co., N. Y. 1914.

- Love, Chas. A., 3353 22nd St., San Francisco. 1901.
- Love, Guy, R. D. 5, Oberlin, Kas. 1913.
- Lueddemann, Frieda, Box 105, Los Gatos. 1914.
- Lund, Henry J., 526 Spencer Ave., San Jose. 1916.
- Lusk, Richard D., Winkelman, Ariz. 1915.
- Luther, Clarence H., 8 McIlroy Bldg., Fayetteville, Ark. 1909.
- Magee, William A., R. D., Box 433, Fruitvale, Oakland. 1912.
- Mailliard, Ernest C., 1815 Vallejo St., San Francisco. 1909.
- Mailliard, John W., 260 California St., San Francisco. 1894.
- Mailliard, Joseph, 260 California St., San Francisco. 1895.
- Marshall, Dr. Benj. M., 2036 D St., Eureka. 1913.
- Marshall, T. K., 85 Rincon Road, Tucson, Ariz. 1916.
- Martin, John W., 339 N. First St., San Jose. 1907.
- Martin, Luke B., Clearwater, Fla. 1914.
- Massey, Herbert, Ivy Lea, Burnage, Didsbury, Manchester, England. 1909.
- Mattern, Edwin S., 1042 Walnut St., Allentown, Pa. 1914.
- McAtee, W. L., Biological Survey, Dept. Agriculture, Washington, D. C. 1907.
- *McGregor, R. C., Bureau of Science, Manila, P. I. 1893.
- McLain, R. B., Market & 12th Sts., Wheeling, W. Va. 1897.
- McLean, Donald S., Coulterville. 1916.
- Mearns, Lieut. Col. Edgar A., U. S. National Museum, Washington, D. C. 1905.
- Meeker, Jesse C. A., Box 161, Danbury, Conn. 1907.
- Meister, H. D., Wauseon, O. 1909.
- Merrill, E. W., Sitka, Alaska. 1912.
- Mershon, W. B., Saginaw, Mich. 1911.
- Meyer, Miss Heloise, Overlee, Lenox, Mass. 1914.
- Michael, Chas. W., 83 Sharon St., San Francisco. 1916.
- Miller, Mrs. E. C. T., 1010 Euclid Ave., Cleveland, O. 1914.
- Miller, Miss Georgia V., 419 Golden Gate Ave., San Francisco. 1915.
- Miller, Dr. L. H., State Normal School, Los Angeles. 1905.
- Miller, Mrs. Olive Thorne, 5928 Hayes Ave., Los Angeles. 1911.
- Miller, W. DeWitt, American Museum Natural History, New York City. 1909.
- Mills, Enos A., Long's Peak, Estes Park, Colo. 1914.
- Miner, Dr. H. N., Colfax, Yolo Co. 1903.
- Mitchell, H. H., Dept. Agriculture, Provincial Museum, Regina, Saskatchewan, Canada. 1915.
- Mitchell, Dr. Walton I., 603 Beacon Bldg., Wichita, Kas. 1909.
- Moles, S. D., 157 W. 7th St., Claremont. 1915.
- Moore, Chas. S., Box 222, San Diego. 1913.
- Moore, Miss Nellie, 122 Falcon Ave., Long Beach. 1915.
- Moore, Robert T., 46 Mansion Ave., Haddonfield, N. J. 1911.
- Moran, R. B., 311 California St., San Francisco. 1897.
- *Morcom, G. Frea, Box 175, Huntington Beach. 1904.
- More, R. L., Vernon, Texas. 1911.
- Morgan, Miss Mattie Beth, 2931 Travis Ave., Ft. Worth, Tex. 1916.
- Mueller, Carl, Marysville. 1911.
- Muller, James L., 1519 S. Second St., Salt Lake City, Utah. 1916.
- Munro, J. A., Okanagan Landing, B. C., Canada. 1914.
- Murie, O. J., 219 7th Ave., S., Morehead, Minn. 1913.
- Myers, Mrs. H. W., 311 N. Ave. 66, Los Angeles. 1912.
- Nelson, E. W., 305 The Northumberland, Washington, D. C. 1904.
- Nevin, W. H., Pasadena. 1915.
- Newhall, Mrs. Chas. S., 2629 Piedmont Ave., Berkeley. 1916.
- Nichols, J. T., American Museum Natural History, New York City. 1909.
- Nicholson, Donald J., Orlando, Fla. 1911.
- Noack, H. R., 309 Perry St., Oakland. 1901.
- Nokes, Irwin D., 820 Marsh-Strong Bldg., Los Angeles. 1914.
- Norris, Joseph P., Jr., 2122 Pine St., Philadelphia, Pa. 1911.
- Norris, Roy, 725 N. 10th St., Richmond, Ind. 1911.
- Oberholser, Harry C., 1444 Fairmont St., Washington, D. C. 1904.
- Ohl, H. C., Newark, Alameda Co. 1913.
- Ohlendorf, Dr. W. C., 1922 Blue Island Ave., Chicago, Ill. 1910.
- Osgood, Wilfred H., Field Museum, Chicago, Ill. 1893.
- Osterhaut, Geo E., Windsor, Colo. 1915.
- Overington, R. Bruce, Laurel, Maryland. 1915.
- Owen, Virgil W., 1241 Vine St., Hollywood. 1896.
- Palmer, Elizabeth Day, 1741 Harvard Blvd., Los Angeles. 1909.
- Palmer, R. H., Pocatello, Idaho. 1915.

- Palmer, Dr. T. S., 1939 Biltmore St., N. W., Washington, D. C. 1903.
- Parker, Herbert, South Lancaster, Mass. 1911.
- Parmenter, Henry E., 122 Newberry St., Boston, Mass. 1916.
- Paschal, Robt. L., Fort Worth High School, Ft. Worth, Tex. 1916.
- Paul, J. H., 1320 E. Second St., South, Salt Lake City, Utah. 1915.
- Paul, Lucius H., 19 Aurora St., Rochester, N. Y. 1911.
- Peabody, Rev. P. B., Blue Rapids, Kas. 1904.
- Pearson, T. Gilbert, 2257 Loving Place, New York City. 1910.
- Peck, Morton E., 244 N. 12th St., Salem, Ore. 1909.
- Pemberton, J. R., 71 Clarendon Ave., San Francisco. 1900.
- Peyton, Lawrence, Sespe, Ventura Co. 1909.
- Peyton, Sidney B., Sespe, Ventura Co. 1913.
- Phelps, Frank M., 212 E. 4th St., Elyria, O. 1912.
- Philipp, Philip Bernard, 220 Broadway, New York City. 1911.
- Phillips, Chas. L., 5 W. Weir St., Taunton, Mass. 1915.
- Phillips, John C., Knobfields, Wenham, Mass. 1911.
- Pierce, Wright M., Box 116, Claremont. 1902.
- Pierpont, Philip, Nordhoff. 1913.
- Pilsbury, Frank O., 90 Main St., Walpole, Mass. 1911.
- Pleasants, Mrs. J. E., R. D. 3, Orange. 1900.
- Polkinghorn, George, 2651 Kenwood Ave., Los Angeles. 1915.
- Pope, E. F., Colmesneil, Texas. 1913.
- Powell, Helen, 2703 Dwight Way, Berkeley. 1914.
- Pratt, Miss Anna B., Fallbrook, San Diego Co. 1916.
- Price, A. E., Grant Park, Ill. 1905.
- Price, Kenneth, Whittier. 1916.
- Pringle, Cornelia C., Cupertino, Santa Clara Co. 1915.
- Purinton, C. A., 2223½ Chapel St., Berkeley. 1915.
- Radir, Paul L., 335 W. 27th St., Los Angeles. 1913.
- Randolf, Flora A., 2962 Derby St., Berkeley. 1907.
- Rankin, Edward P., care U. S. S. Albatross, Sausalito. 1913.
- Rathbun, S. F., 217 14th Ave., N., Seattle, Wash. 1904.
- Ray, Milton S., 220 Market St., San Francisco. 1899.
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COOPER ORNITHOLOGICAL CLUB

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XVIII

July-August, 1916

Number 4

BREEDING OF *TIARIS CANORA*, AND OTHER NOTES FROM THE U. S. NAVAL STATION, GUANTANAMO BAY, CUBA

By DR. T. W. RICHARDS, U. S. NAVY

WITH THREE PHOTOS BY THE AUTHOR

THE COLLECTOR who selects the southeast coast of Cuba for his first trip to the tropics is apt to find his early impressions somewhat disappointing. Steep hills rise abruptly from the water's edge, their gray sides seamed and gashed by erosion. Instead of waving palms and luxuriant verdure, such as one pictures in imagination, we find here cacti and thorny shrubs in endless variety. Upon their branches epiphytes crowd in rank profusion, while trailing vines bind the whole into thickets well-nigh impassable. In short, the terrain is in many places semi-arid and the vegetation distinctly xerophytic. Here and there clumps of palms struggle successfully for existence, but the general tone of the landscape is gray, rather than green, and closer acquaintance impresses one with the easy transition from leaves to thorns. First impressions, however, are proverbially misleading, and it is only fair to say that our traveller has no real cause for discouragement. In the first place he can probably find all the tropical luxuriance his heart desires by going a few miles inland, while even within the coastal region itself there is much of interest to the ornithologist. If I have somewhat emphasized the other aspects it is because there seems to be a rather prevalent impression that all tropical localities are much alike, whereas it is quite otherwise in fact, and a collector is apt to find plenty of variety without going far afield to look for it.

Guantanamo Bay lies on the south coast of Cuba, some 65 miles from Cape Maysi, the eastern extremity of the island. It is a beautiful sheet of water about eleven miles long and perhaps six wide at the most, with a comparatively narrow entrance, in fact one of those "bottle-necked" affairs so common on the Cuban coasts. The shore-line is tortuous and irregular in the extreme, be-

ing indented by an endless variety of inlets and bayous where one may cruise for days in a "kicker" and continually run across vistas that are new. In many places a dense growth of mangroves fringes the water's edge, forming a congenial retreat for pelicans, frigates and herons. To the botanist a mangrove swamp is said to offer points of peculiar interest; but the practical ornithologist, whose chief concern is to find a way through, is not likely to share his enthusiasm; the growth is absolutely impenetrable by boat, and locomotion over the slippery aerial roots sooner or later is apt to land one in the black and sticky mud below. These trees find their greatest development on the banks of the so-called Guantanamo River, a narrow, canal-like stream that flows along the west side of the bay and empties near the harbor mouth. Its quiet waters afford good fishing and plenty of alligators, while herons of several species frequent the banks. The local headquarters of this family, however, is a big swamp at the upper end of the bay beyond the limits of our reservation. When I last visited this locality, several years ago, I found a native family—wretched victims of "calentura"—established on its outskirts busily, and suc-



Fig. 40. VIEW ON GUANTANAMO RIVER, CUBA

cessfully, occupied in "plume hunting". Since then this traffic has diminished, not only from lack of material, but also, let us hope, from some enforcement of the excellent protective laws promulgated by the Cuban government.

While my various trips to this station, since our occupation in 1898, include nearly every month in the year my longer visits have usually been during January, February and March; consequently most of my observations pertain to late winter and early spring, the latter part of the dry season. Without attempting a complete or even provisional list of birds found on the Station the following brief remarks on a few that have seemed to me particularly interesting or characteristic may help to give some general idea of the local avifauna as a whole.

✓ *Pelecanus occidentalis*. Brown Pelican. Pairs or single individuals seem to pre-empt certain small inlets and stick closely to their own particular locality. Still common at all times and doubtless breeds in the vicinity.

✓ *Fregata aquila*. Frigate Bird. Formerly very common and probably bred on or near the Station. Now much less abundant, at least during the winter months when

the Atlantic Fleet makes this harbor its rendezvous. Those that remain soon get accustomed to the ships and are not at all shy. These big birds seem to fall easily to the gun. Upon one occasion I took a chance shot with no. 8's at one sailing high overhead and to my surprise he tumbled into the boat.

Herodiniidae. Away from the immediate vicinity of ships and houses one or more species are always in evidence. *Florida coerulea coerulescens* (Little Blue Heron) seems much the commonest, and *Butorides virescens maculata* (Antillean Green Heron) the most generally distributed. In running up the Guantanamo River I have observed small parties of the former keeping just out of gunshot by making repeated short flights ahead of the boat. They seemed loath to leave the stream, and sometimes kept this up for a mile or more before swinging up over the mangroves.

A few years ago Egrets and Spoonbills were fairly common, the latter occurring in good-sized flocks of a dozen or more; but during my last visit (1915) I saw no specimens of either species. While not harrassed within the actual limits of the reservation, there was doubtless much persecution in the vicinity outside. Being shy anyway they may not be yet as rare as they seem, simply avoiding the harbor while the ships are in port.

✓ **Zenaida zenaida.** Zenaida Dove. Common in the chaparral, but shy and difficult to approach even at the nest. Two fresh eggs were taken from a nest in a low bush June 8, 1914, probably a late date. On March 27, 1915, while out with a friend, he brought me two eggs which, from his description of the bird, were almost certainly of this species, as the only others he might have found breeding locally were the White-winged and Carolina doves. This nest also was several feet from the ground.

✓ **Columbigallina passerina aflavida.** Cuban Ground Dove. Very abundant and extremely tame. They probably begin to breed early, as I found a nest (six feet from the ground) with half-fledged young early in March.

✓ **Falco dominicensis.** Cuban Sparrow Hawk. Common and much more tame than their northern relatives. I have walked past within twenty feet of one by the roadside. I was particularly anxious to find a nest of this species but never succeeded, though I once flushed two of the birds from a likely looking hollow stub. Like several other species, birds dissected in March failed to show development of the reproductive organs, and I am in doubt as to their breeding season.

✓ **Glaucidium siju.** Cuban Pigmy Owl. Not uncommon among palms, and frequently abroad in the brightest sunlight. When I first heard its note I mistook it for that of a flycatcher.

✓ **Crotophaga ani.** Ani. "Judio". Still common, but perhaps somewhat less so than formerly. Usually seen in small flocks of a dozen or less, their shrill cries and black dress making them much in evidence. Easily approached, and I have had no difficulty taking them with my little .44 calibre. Their well-known habit of "dribbling" along, so to speak, is very characteristic; that is, a flock seldom moves as a unit, but one bird flies ahead and alights, then others follow at intervals, either singly or by two's and three's, until in a short time they are all together again. I never found a nest, though I made a point of looking for it, and birds dissected during February and March did not seem to be breeding. Ordinarily these birds are seen along the trails and about the more open spaces, but they may retire to the denser scrub to breed.

✓ **Saurothera merlini.** Cuban Lizard Cuckoo. This bird has the same shy and retiring habits as its allies farther north; keeping well to the chaparral it would seldom be observed were attention not attracted by its note. Its flight is slow and seldom prolonged more than a few yards, but once on the wing its enormous outspread tail makes it conspicuous enough. Usually seen in pairs and quite common.

✓ **Priotelus temnurus.** Cuban Trogon. This exquisite bird I saw but seldom and then only in thick scrub where it is not easily distinguished in spite of its brilliant plumage. But I think it is really comparatively rare. The collector who can put up a good skin of this species with neatness and dispatch has skill and experience; the skin itself is like tissue and the feathers fall out in bunches at every touch.

✓ **Centurus superciliaris.** Cuban Ladder-backed Woodpecker.

✓ **Xiphidiopicus percussus.** Cuban Green Woodpecker. Both species fairly common wherever there is a sufficient growth of palms; not observed elsewhere. On March 30, 1915, I shot a male of the former species from a newly excavated hole in a palm stub some eight feet from the ground, but unfortunately the eggs had not yet been deposited.

The cavity was neatly made and chips of soft palm fibre at the bottom formed quite a comfortable bed for a woodpecker.

✓ *Todus multicolor*. Cuban Tody. Common in the scrub, and ridiculously tame and friendly. One is usually first made aware of their presence by their curious clattering note, which seems much too loud for such a tiny body. By keeping quite still I have often had them hop up almost within arm's reach, apparently through sheer curiosity. The coloring is bold and beautiful.

✓ *Tolmarchus caudifasciatus*. Cuban Kingbird. Very common. During March these birds seemed to be always in small groups of five or six individuals, and I saw no evidence of nesting up to the time I left last April. On June 8, 1914, I found a nest with small young, in the upright forks of a large cactus, and I have observed many old nests probably of this species in similar situations. Apparently May is the month for fresh eggs and I have just missed it in recent years.

✓ *Icterus hypomelas*. Cuban Oriole. Fairly common in more open places, particu-



Fig. 41. BETWEEN THE TRAILS: U. S. NAVAL STATION, GUANTANAMO BAY, CUBA

larly among palms, where it builds its nest. It also frequents trees about houses and gardens like some of our northern species. On the 25th of March, 1915, I located a nest by watching a pair of the birds. The structure was entirely invisible from the ground, being attached to the under side of a dead and pendant palm frond. It is composed entirely of fine fibres of the same material, neatly and substantially woven in the usual icterine manner. On the above date the nest was empty but apparently ready for eggs, so I returned six days later expecting a set. No birds were about but there was one egg, which, to my surprise, was quite unlike that of any oriole familiar to me, being decidedly *Molothrus*-like in type. Although I had seen no cowbirds at any time, I suspected that it might have been deposited by one of these vagrants, but upon subsequent enquiry Dr. Richmond informed me that there was no cowbird in Cuba. It is experience like this that make egg collecting a difficult matter in foreign countries.

✓ *Melopyrrha nigra*. Cuban Bullfinch. This bird, which is not a true bullfinch, Dr. Richmond tells me, is found only in Cuba, though there is an allied species in Grand

Cayman. It did not seem to be common, though the black and white of the males is conspicuous enough to attract attention. A nest with three well-incubated eggs was taken March 18, 1915. Nest globular, with entrance in side; built in a dense thorny tree by side of trail through scrub; twelve feet from ground; male on nest. The nest resembles closely that of the Melodious Grassquit. The eggs are unlike any others known to me, although the description does not seem peculiar. Ground color yellowish white, spotted with lilac and brown, chiefly about larger end. Size .73x.53 inches.

Tiaris canora. Melodious Grassquit. This species finds a place on the A. O. U. List by virtue of its accidental occurrence on Sombrero Key, a tiny islet off the southern end of the Florida peninsula. As its eggs are not too common in collections, and little information regarding its nidification appears to have been recorded, I was particularly pleased to find this species generally distributed, and breeding abundantly on the reservation. My first set was taken March 9, 1915; and, as no fresh eggs were observed after the 18th, it seems probable that the breeding season, for the bulk of this species at least, is comparatively restricted. The nests vary little in structure, being globular in shape, with a side entrance, the whole affair about the size and shape of a Marsh



Fig. 42. ARBOREAL ANTS' NEST WITH GROWTH OF EPIPHYTES: CUBA

Wren's. On the whole, they are very neatly constructed, of fine grey fibres so compactly woven that they seem to last for several seasons. Old nests were so common and fresh looking as to make collecting difficult, for it was not usual to find a bird at home even when a nest held incubated eggs, and as they were always in thorn trees it was no small matter to investigate each one individually. The parents, in fact, seem to take little interest in their household duties; usually they appear after some waiting and then show no great concern about the operations of the intruder.

As the trees and shrubs in this locality have generally very small leaves the nests are very conspicuous objects where the ground is at all open; naturally most of mine were taken in such situations or along the trails, but I saw others in very dense scrub. With one exception all were in thorny trees, one particular species being generally selected. The exception noted was taken from the upright triple fork of a cactus growing in an open glade. The nest was about eight feet high and I hooked it out, eggs and all, with a forked stick. In some cases the nests were so firmly entangled among thorns that it was difficult to displace them intact, and still more difficult to remove the eggs;

I destroyed one fresh set in a vain attempt. The lowest occupied nest was six feet from the ground, the highest nearly twenty; probably the majority were not above twelve.

The full complement of eggs appears to be generally three. A good many incomplete sets were observed which for one reason or another could not be revisited, but of the nine actually collected there were seven three's, one incubated set of two, and another of four.

The eggs are white, more or less spotted with various shades of brown. In some cases the spots are pretty well distributed over the entire surface, but usually most thickly about the larger end. The set of four, recorded above, is particularly pretty, the color forming a wreath about the base of each egg, while the greater part of the surface is white. The sizes, in inches, of three specimens, selected from different sets, are as follows: .61x.48, .60x.47, and .57x.45. They are thus somewhat smaller than the average given by certain writers (e. g., Reed, .65x.50).

✓ *Mimus polyglottos orpheus*. Cuban Mockingbird. This form, which occurs in Cuba, Grand Cayman, Jamaica and Porto Rico, has either increased of late on the Station, or it has become more sociable, for it seems much more in evidence than formerly, particularly about the houses. The breeding season must be very prolonged and perhaps more than one brood is raised. At any rate fresh sets were common the latter half of March when I also took young on the wing. The full complement of eggs seems to be only two or three, in about equal numbers, and in no instance out of many did I find more. But small sets are the rule for most species all over the tropics. Eggs, nests and habits generally do not appear to be peculiar.

✓ *Mimocichla rubripes schistacea*. Gray-bellied Red-legged Thrush. While neither very common nor conspicuous, I cannot omit mention of this species on account of its singular grace and beauty. The first specimen I secured, some years ago, was apparently feeding on a bit of stony beach on the bay shore, probably a very unusual proceeding as I never afterwards observed one except in the dry thickets.

In conclusion it may be as well to remark that the oologist who makes a flying trip to the tropics is likely to have his work cut out for him if he expects to collect many eggs. Unless he is thoroughly prepared beforehand most of the birds will be new to him and their eggs and nesting habits may be quite unknown. He is thus at a great disadvantage in finding eggs and must use extra care in identifying them afterwards. It is not always easy to shoot a parent, and when one does so the bird is not infrequently lost in the dense vegetation. All this means much loss of time and physical effort. Personally, I believe in "going light" in the field. Of course where skins are a main object a gun is indispensable, and it is well to remember that birds shot in the morning will not always keep over until one gets home at night, and I have sometimes had to skin in the field.

For a day's hike after eggs I found the following outfit convenient. *Clothing*: Cotton underwear, khaki trousers, flannel shirt (nothing thinner will stand the thorns and prevent sunburn), straw hat (cork helmet or army "campaign" hat would be better headgear, but they are much in the way), leggings, and stout laced shoes. *Equipment*: Collecting gun. Marble's "Game Getter", with 18-inch barrels, appeals to me; it has two barrels, .44 shot and .22 rifle; with folding skeleton stock it carries well in a holster and its weight is a trifle. It is good for anything up to a crow and beyond that one can try the rifle. It shoots hard and my only trouble last year was having shot too large—no. 8; "dust" to 10's would be about right, as my small birds were blown to bits. Basket of woven palm leaf (locally an article which is common and cheap but exceedingly light and strong); "grub" (but not too much of it), and last, but *most important*, a canteen filled with good water. If the canvas is kept wet the contents will be drinkable in the hottest sun. Such an utensil drags at the belt and is awkward to carry, but one risks serious ill-

ness by leaving it behind. To the above I sometimes added a folding butterfly net, for it is well to take what comes along in out of the way places. Butterflies were individually common but I found no great variety. I suppose the season was too dry and the locality over-exposed to the strong trade wind.

In this season and locality the heat is greatly tempered by the trade wind by day, and at night one needs a blanket, though it is very different in humid places away from the coast. In Cuba there are no *poisonous* snakes (though I have seen some good big ones); but insect pests are at times somewhat too varied and abundant. In short there are minor drawbacks—and one should take reasonable precautions against illness; but in spite of all these the collector who longs for new fields and change of environment will find pleasure in both in the sunny island off our southern shores.

U. S. S. Maine, New York, February 4, 1916.

MEETING SPRING HALF WAY

By FLORENCE MERRIAM BAILEY

I

TEXARKANA", the porter announced to a curtained aisle on that April morning. Texarkana! May all men know by these presents just where they stand. We raised the shades to find that in the night winter had been left behind, spring had come in Texas, spring with its birds and flowers and green things growing. "The trees are all green!" a boyish northern voice exclaimed with fervor born of snowbanks passed in the Alleghanies. And so they were, all green, not with the dark heavy green of summer's fulfillment but with the delicate green of the first blush of spring promise, at whose delicacy you fairly hold your breath; a green that is almost white with the young hickory leaves, a tender pink with the oaks, making the woodland pools reflect a veritable fairyland forest. Blooming apple and peach trees gathered butterflies, leaf-crowned oak tassels swayed in the wind, and as the train passed through a stand of pine we breathed the velvety air of sulphuring pineries—nature was full of rich promise. All the warmth of the woods centered in the red bud, all the light of the woods focused in the snowy thorn and the dazzling white sprays of the dogwood. The ground flowers were blooming also—exquisite spring beauties, Baptisia, mandrake, and deep magenta phlox in luxuriant bunches.

Through the open windows came the spring songs of Tomtits, Cardinals, and Mockingbirds, and as if to furnish appropriate setting, there passed in rapid succession cotton fields with last year's bolls hanging, darky shanties flanked by outside chimneys, groups of pickaninnies, colored women in sun-bonnets driving mule plows, and oak woods in which small brown pigs rooted for acorns. The handsome red horse-chestnut blooming in the woods recalled Audubon's famous painting of the Carolina Wren. At a wayside station the squawk of a Bluejay came in through the window, while from a passing swamp came the call of the Maryland Yellow-throat, not to be heard in Washington for fully two weeks. The first palmettos and bunches of cactus were followed near the Trinity River by the first gray moss, in which appropriately enough Parula Warblers were singing, also two weeks ahead of Washington. The

white flower spikes of the yucca, the purple clusters of the wistaria, the green bunches of Baptisia and discs of mistletoe, scarlet painted cups and fields of solid yellow and purple gave pleasing diversity as the train passed through their varied habitats.

But the vivid green of spring to us from the brown north was perhaps the dominating pleasure of the journey, greatest near the close of the day when the slanting yellow light intensified the green of a meadow, made an oak fairly glow beside a dark juniper, and gave an exquisitely delicate green to an acre of mesquite whose finely cut leaves—most interesting fact in the study of the light relations of plants—lets the sun shine through so that the ground beneath bears a carpet of flowers.

At Austin, where we saw baled cotton in the depot, the birds were a striking mixture of northern, southern, eastern, and western species. We were greeted by the song of the Canyon Wren! Out of place as it seemed in the city, the clear, pure notes rang out as bravely as in a canyon, and the little canyon dweller might easily have strayed over from congenial ground in the first escarpment of the lower Staked Plains, three miles to the westward. Several of the birds were seen in the city. One that stood on a chimney top, its long bill, rounded back, and hanging tail silhouetted against the sky, sang loudly, swaying from side to side till a lordly Mockingbird flew over and calmly appropriated its perch. Mockingbirds were everywhere, singing with equal abandon from the chimney above us or the fruit trees close beside us. And well might such southerners feel at home, for among the flowers and trees of the city were numbered yucca, tamarisk, banana, fig, and pride of India. From one of the berry-bearing pride of India trees rose a flock of the cosmopolitan Cedar Waxwings, but they may have stopped for the berries of the mistletoe, also borne by the little tree. The more northern Turkey Vulture was in the sky with its southern relative the short-tailed Black Vulture, whose services as scavenger were evidently appreciated by the inhabitants, for when it was suggested that one suspected of eating a snake should be shot to settle the matter, the citizen addressed promptly replied, "You'd have the corporation after you if you did!" Purple Martins were already back from Brazil, their loud twitterings being continually in our ears. Less traveled Western Lark Sparrows were among the commonest birds of the city, singing loudly from the trees of the yards and streets, and a resident Cardinal flew into a bare tree only a few feet from us on the grounds of the State University.

These grounds presented a picture long to be remembered, for they were solid acres of blue-bonnets, low, deep blue lupins, among the choicest of the family, that made the air rich with their hyacinthine fragrance. In some fields the blue was toned to an exquisite color scheme by a mixture of pink verbena and vivid pink phlox outdoing their garden cousins in luxuriance. The lupins reached out to the edge of the big spreading live oaks, trees that interested us greatly as they bore a form of the so-called Spanish moss (*Tillandsia recurvata*), that instead of hanging in long veils grows in short tufts on the branches. As we examined it, a herd of Jerseys grazed under the trees with pleasantly jangling bells whose leisurely tinkling harmonized with the familiar *Pe-ter, Pe-ter, Pe-ter*, of the Tufted Titmouse which hunted among the branches, and the soft cooing of Mourning Doves which flew around through the trees with musically whistling wings.

On the University grounds one of the everyday birds was that theatrical

character, the Scissor-tailed Flycatcher, one of the birds that makes Texas peculiarly attractive to the bird student. To easterners, to whom the name Flycatcher calls up drab Phoebes, pensive Wood Pewees, plainly clad Kingbirds, and small olivaceous Empidonaxes hard to find in the green woods, the first sight of the Scissor-tail is little less than astounding. Nature, apparently tired of making Quaker garbs for retiring woodlanders cut a new pattern, on Swallow-tailed Kite lines, adding splashes of salmon to the striking black and white plumage, after which she endowed her creation with the skill of an acrobat, the dash and fire of a master spirit of the air.

Between its noisy acrobatic feats the Scissor-tail sits demurely on a telephone wire, apparently its favorite perch, though it looks much too large to perch on a wire. But the long scissors that open and shut so effectively during aerial displays keep a nice balance, and after all, though making such a brave appearance, *forficata* is mainly wings and tail, feathers and fire. Giving chase to Hawks and Caracaras—the Mexican Eagles used as the national emblem of Mexico—is every day sport, and no chance is lost to show who is lord of the neighborhood. A pair of the Flycatchers that I happened on had a nest in a low tree and the female was quietly brooding when a strange Scissor-tail appeared. The guardian of the nest waited to ask no questions but darted at him in fury. As the two chased through the air, to our amusement the brooding bird jumped up on the edge of the nest and stood looking after them. When the visitor had been driven from the landscape the lord of the nest performed a series of aerial evolutions as if to relieve his outraged feelings. The curious performances of these original birds entertained us all the way across southern Texas.

From Austin to San Antonio we were crossing their country, the mesquite end of the great prairie that extends from the Gulf to the Saskatchewan, and between cotton fields, flowers filled the spaces among the mesquite trees. In San Antonio as in Austin we found northward bound Waxwings and White-throated Sparrows still lingering, while Martins, Cardinals, Mockingbirds, and Jackdaws swelled the list of city birds that might well make northerners envious. But though San Antonio has become a bustling American city, Mockingbirds may still sing in the plaza by moonlight and many picturesque, softly tinted adobes on the outskirts keep the flavor of the old Spanish town and hark back to the days of the Alamo.

On our way from San Antonio to Corpus Christi we crossed more arid mesquite and cactus country where the wind comes from the dry interior and there is practically a northward extension of the Mexican flora and fauna. Large herds of cattle and men on the round up were seen, for most of the country was then, in 1900, given over to cattle range. At Beeville this arid, barren, mesquite plain changed to fertile coast prairie on which there were strips of scrub oak and a mixture of chaparral, with some new flowers and old ones in new combinations. A heliotrope-like purple Phacelia grew in masses along the railroad, and scattered among the white poppies a magenta Callirhoe gave rich color as the western light shone through its broad petals, while masses of yellow evening primrose added to the rich effect. A glorious prairie sunset ending in deep red and purple told that we had entered the humid coast belt.

But back from Corpus Christi Bay, where we stopped for a little work, the prairie cover was a mixture of mesquite, cactus, and wind-compacted chap-

arral. The flora was Mexican, strange thorny bushes being interspersed with brilliant flower masses. The fences were made by pitchforks with cactus pads, the pads laid along a line on the ground rooting and branching till they grow to high impenetrable fence walls that in their season become beautiful with large yellow tuni flowers. When spring comes on the prairies of Texas, even the fences burst into bloom.

It seems a world of flowers and birds, for as you go south you meet hordes of nocturnal migrants that have stopped to rest and feed by the way. Such a cosmopolitan assembly of birds! Resident southerners jostling wings with passing northerners on their way from their southern wintering grounds to their northern breeding grounds. On the prairie near Corpus Christi there were among others both the northern and southern Vultures, and such southerners as Harris Hawks, Desert Sparrows, Road-runners, Scissor-tailed Flycatchers, Jackdaws, Pyrrhuloxias, Mockingbirds, and Caracaras side by side with such northerners as Dickcissels, Lincoln Sparrows, Lark Buntings, White-crowned and White-throated Sparrows, Upland Plover, and Warblers. Swifts, Swallows, Nighthawks, Cowbirds, Hummingbirds, Gnatcatchers, Marsh Hawks, Kingbirds, and other Flycatchers, Bob-whites, Wrens, Shrikes, Orchard Orioles, and Vireos added to the confusion. In the absence of high trees the bushes and thickets seemed crowded. Not every seat was taken, to be sure, but you were impressed by the numbers of birds and surprised by the incongruous assemblies that confronted you in the bushes. Mourning Doves seemed to be everywhere in the brush, many of them apparently passing the time while their mates brooded. Lark Sparrows were in squads singing in the bushes or feeding on the ground, their white tail crescents flashing out as they flew, Grasshopper Sparrows were chirring everywhere, and Mockingbirds were singing and scolding and going about their daily matters. Once a whirl of birds passed, explained by a handsome white-rumped Harris Hawk. Now and then a brilliant Cardinal appeared on top of the chaparral and sang.

But the song that dominated part of the brushy prairie was a new one to my ear and became the song of songs to me, for it is to the southern prairie what the rare song of the Pine-woods Sparrow is to the moss draped pines of Florida, and the chant of the Hermit Thrush to the pointed firs of the northern mountains. The Cassin Sparrow! Even now, long years after, the name of that plain little brown bird comes with bated breath. How it recalls the first time it was heard! It was on an ordinary sunny Texas morning that I walked out into ordinary chaparral prairie in an every day mood, all ignorant of the existence of *Peucaea cassini*, when lo! from the brown bushes in front of me up sprang a little winged creature, a 'blithe spirit', an embodiment of the deepest joy of life, and with head raised and wings outspread, from a well spring undefiled poured out a song that held both the gladness of the blooming prairies and all the joy and hope of his mate on the nest.

While such intimate pleasures were to be experienced among the birds of the neighboring prairie, interesting hints of the surrounding water bird life, both resident and migrant, were obtained at Tule Lake to the northwest and also along the shore line adjoining Corpus Christi.

Tule Lake was alive with Grebes, Shovellers, Plovers, Sandpipers, and Terns, and a party of tall pinkish Avocets were wading out across the small waves, putting their long up-curved bills down delicately before them; while Stilts, all black above, all white below, stilted up on long pink legs, were going

through a variety of amusing antics and raising their black triangular sails over their backs. Rising from the lake flocks of Sandpipers would go whirling away dark before us, at a turn glancing white against the blue sky.

Not far from Tule Lake, at Priour's Ranch, the home of an old collector, specimens of rare southern birds were to be seen, among them skins of the Black Skimmer, Roseate Spoonbill, and most remarkable of all, Mexican parrots said to have been taken near Corpus Christi when severe southern winds were blowing up from below the boundary line. A barrel of wild cat and coyote skins was shown us and the skulls were seen lying around in the corners of the workshop. Live Brant of different species were in hen coops in the yard, and a small mother Tree Duck driven away by a Turkey whose society she had enjoyed was said to be dividing her time between the barnyard and the kitchen.

Beyond the ranch we were pleased to find eight Roadrunners, so quaint and curious that they are to other birds what the cactus is to garden plants. In some places along the way we saw them standing up on fence posts, crested heads and long necks raised and long tails flipped up enquiringly, for all the road to see. Here they were so tame they would not take the trouble to get out of sight. A few Snowy Egrets, Poorwills, small moth-like Bullbats, and Mexican Eagles added to the southern feeling. Picturesque Mexicans with two-wheeled mule carts carrying women with black rebozas over their heads, and men with peaked hats, together with pole houses thatched with cattails, reeds, or marsh grass, accented the Mexican flora and fauna.

The shore line from Corpus Christi Bay south afforded many novel sights. A line of pasture fence posts that extended thirty or forty rods out into the shallow water of the bay, were favorite perches of a variety of water birds. Three Cormorants, a Great Blue Heron, and two Brown Pelicans made up the row one day, the Pelicans making droll figures like china toys with heads erect and chins drawn in. Formerly, we were told, a thousand Pelicans nested on a small island twelve miles from Corpus Christi, but the colony had been entirely broken up. Only about half a dozen of the interesting birds were seen when we were there. In flight, with their big bills on their pouches, their great flapping wings and short tails, they were droll figures indeed, suggesting wise feathered magicians. Deserted nests of Great Blue Herons, big saucers of twigs set on bush tops, were seen, and on a low grass-covered island the Herons themselves were found standing. Along the shore were seen Sandpipers, Plovers, Willets, Yellow-legs, Stilts, Curlew, Turnstones, Gulls, and Terns, together with Kingbirds, Yellow-headed Blackbirds, Horned Larks, and Pipits—along the shore of the Gulf of Mexico, as I liked to say to myself. An historic spot below us made it seem more real, for here during the Mexican war one side buried a ship-load of flour and the other side on discovering it, dug it up! Sometimes the picture from the shore of the gulf was a monochrome, a gray sky over gray water touched with life by white caps blown in by the wind. On moonlight nights when the yellow globe filled all the sky with light down to the level prairie horizon, giving a wonderful effect of wide illumination, the harbor was especially beautiful and peaceful, with the silvery gleam of the moon on the water, and the soft lapping of waves along the shore.

(To be continued)

ON BICYCLE AND AFOOT IN THE SANTA CATALINA MOUNTAINS

By F. C. WILLARD

ABOUT nine o'clock on the morning of May 19, 1904, two bicyclists might have been seen leaving Tucson, Arizona, in the direction of the Santa Catalina Mountains. They were O. W. Howard and myself, our handlebars piled high and our shoulders well draped with the necessary paraphernalia for a trip into the region of giant cottonwoods, firs, and cactus to be found on the San Pedro slope of the aforesaid mountains.

A few nests of Palmer and Bendire thrashers tempted and delayed us somewhat, so it was noon before we reached Agua Caliente, eighteen miles from Tucson. Here we had to leave our wheels and shoulder our packs. A rancher named Vail served us luncheon, during which we listened to directions as to trails and short cuts which would bring us to Foran's camp, on the other side of the mountains and twenty-one miles distant. About one o'clock we set out, the hot sun beating down on our backs as we climbed the steep zigzag which leads to the top of the pass some three hundred feet above us. A few Cactus Wrens, Mourning Doves and Verdins were seen on the way to the summit. Here we passed the Indian postoffice, a relic of the Apaches. It was a pile of small stones, the accumulation of ages, sufficient to fill several good-sized wagon beds, each stone placed there by some Indian in passing to convey a message to some future passer-by. What messages they must have been! We were almost prepared to see a painted face peering at us from behind a boulder as Major Bendire once did not many miles from here. Scrub oak, various cactuses, and bear grass constituted the verdure up to the summit of the pass at this point. For some miles now the grade was very gradual, and scattering groups of large black oaks and Spanish bayonets were in evidence. A few Canyon Towhees and Arizona Jays were the only birds seen.

Passing the summit we began a steeper descent. Sycamore and ash trees began to appear along the bed of the canyon. Cooper Hawks were seen, Turkey Buzzards soared overhead, and in addition to the small birds previously seen, Vermilion Flycatchers appeared quite numerous in the sycamores, where we saw several nests. Howard had been through here a couple of weeks before, when he had collected some eggs of the Zone-tailed Hawk and had seen some Gray Vireos and Broad-billed Hummers. We kept eyes and ears open for the latter two species but without success. Intent on this we passed the dim trail where it branched off to cross over into another canyon, and were not aware of it until some miles beyond and it began to grow dark. Water was scarce, so we hiked back till we came to the first we could find, and hurriedly began to gather wood and select a soft spot for a bed. A long dead sapling made a foundation for an all night fire. Brush and logs were piled on top, after we had dragged this tree into place across a niche in the canyon wall, where it fenced us in. Lighting a fire at one end, we heated a can of beans (such a small one) and made as much of a meal as we could of this and two crackers apiece. Then, with our feet toward the fire we lay on the sand, my sleeveless coat for a cover, a flour sack with a few handfuls of leaves in it for a pillow. Poorwills began to call, a fox barked, and the fire burned bright and warm, making us feel as comfortable and drowsy as could be wished. The *yip-yip-yee-e-e-e* of a coyote sounded, and almost before the long drawn howl ended we were asleep. B-r-r-r, we awoke shivering. Our fire had

burned the length of the sapling and was about out. The sand was as hard as adamant. Too cold to lie still, we slipped on our shoes and hunted up some more wood. By the light of the fire we saw that the time was 2 A. M., so we tried to sleep again, and between dozes gathered more wood. At 4:30 we gave it up and began our second day with our other can of beans and crackers two.

An hour's walk farther down the canyon brought us to its junction with the one wherein lay the camp which was our destination. Up this canyon we went, paying little attention to the birds as we went. We found two nests of the Costa Hummingbird in low-hanging branches of sycamores, saw a pair of Western Gnatcatchers building in an old half-dead oak, and heard the song of several Gray Vireos in the hackberry trees which made a scattered fringe to the canyon bottom. About 10:30 we sighted the camp, and were soon talking to one of the owners. At the first word about dinner we eagerly offered our services as assistants. Frijoles, baking powder bread, dried apple sauce, and potatoes, backed by a huge pot of coffee,—how good they looked on the table. We could hardly restrain ourselves until the big chief, Foran, arrived, covered with muck from his prospect hole. A short rest after dinner and we climbed the hill with Foran to look at his prospect. Then we started prospecting on our own hook along the canyon bed. "Look here", said Howard, and I turned around and saw, not three feet from me, a beautiful Gray Vireo (*Vireo vicinior*) on her nest, hung from the lower branch of a mesquite. She sat very close for a few moments and then slipped off, revealing three white eggs. No other finds rewarded our search that day, but birds were present and the prospect promised great things to come. At the supper table we found Morris Chrisman, prospector, trapper and entomologist. His tents were near by, and his generous supply of blankets, spread under the moonlit sky, was a welcome change from our hard, cold couch of the previous night.

It was sunrise before we awoke. We were through breakfast by 6:30 and, with some biscuits in our pockets started down the canyon looking for Zone-tailed Hawks and Gray Vireos. Several nests of White-winged Doves were seen but not disturbed. Two more sets of Costa Hummer were found in similar situations to those of the day before. We heard some Arizona Cardinals (*Cardinalis cardinalis superbus*), and I located a nest at the extreme top of a hackberry covered with a grapevine. With some difficulty I secured it and the set of three fresh eggs it contained, the female scolding me well and staying close by. While I was thus engaged Howard wandered off and soon called that he had found another Gray Vireo, in a hackberry this time. He had secured it by the time I was down, and we packed the two sets with feelings of elation. Lucy Warblers (*Vermivora luciae*) were heard singing on all sides, and our next find was a nest of this species with four fresh eggs, in a natural cavity in a small stump. Farther down the canyon we passed an immense cottonwood from which Howard had collected a set of Zone-tailed Hawk (*Buteo abbreviatus*), after a daring feat of rope climbing. Below this a group of eight tall cottonwoods stood on guard at the opening of a narrow place in the canyon. Old nests of sticks in their lower crotches were almost beyond the reach of our best thrown stones. I hesitate to guess at the height of these giants but know that they were well over a hundred feet tall. I shall visit them again some day and take their measure and their pictures.

Below here some screaming Zone-tails kept us busy throwing stones at various nests, but the immense size of the cottonwoods wherein they were

placed made an uncertain climb unwise, and we could not pick out any nest that looked sure. Lunch time had long passed without our notice, it was now four o'clock, and we were six miles from camp. We ate our biscuits and started back. Another Arizona Cardinal was heard calling and its nest in a grapevine-covered hackberry yielded three more treasures. By six we were back in camp, and after supper we hit upon a plan by which Chrisman was to go to Reddington, some twelve miles down the canyon, on the San Pedro river, for hay and grain for his two horses, and chuck for the three of us, enough for five days. We planned to go across the foothills into another canyon, and then on to the summit of the range, three days to go, one on top, and then one to return by a shorter, steeper trail.

While Chrisman was gone the next day we hunted as before, though with rather poor success, as we found but one nest each of Gray Vireo and Arizona Cardinal. We met Chrisman about four miles down the canyon as he came back with his load, and returned with him to get our traps ready for an early start the next day. Our program was for Howard and myself to hunt as we went along, leaving the horses and camp to Chrisman. It was some twelve miles to our first camp. The extremely dry season made it necessary to pack both hay and grain for the horses, making with our bed roll and grub quite a load for each of the two, big animals which were Chrisman's pride.

The day was barren of oological results. We made our camp near an old adobe cabin where there was a good stream of water, and were on the road again before six the next morning. A short distance above camp stood a lone cottonwood with a large stick nest near its top. As we approached a Zone-tail left the nest and flew screaming away. I strapped on the climbers, and was not long in reaching the nest, some sixty feet from the ground. It contained two plain white eggs, incubation far advanced. The canyon we were now in was quite barren. Scrub oaks and other brush, with a few chollas and spanish bayonet interspersed, offered few nesting sites. One cholla was found to contain a nest with three eggs of the Palmer Thrasher. Eight miles above our previous night's camp we struck into the trail and followed it over a low ridge into another canyon. Here we found our guide preparing lunch. While he finished his preparations I made a quick search of the oak brush near by and found another nest of Arizona Cardinal. Our next camp was ten long miles up this canyon, over a steep rough trail. We were able to hunt but little and located only a nest of *Phainopepla* with incomplete clutch.

It was after seven o'clock when we approached our destination. A tall slender cottonwood stood close to a high cliff and held at its top a typical *Buteo's* nest, from which flew Madam Zone-tail in response to a well aimed stone. It was too late for a climb then so we put it off for the morrow. After a supper of jerky stew and frying pan bread, both delicious as prepared by our chef, we lay under the branches of a giant sycamore and listened to the whimpering of some Pigmy Owls in a nearby oak. Various other night noises reminded us of our bed on the sand a few nights before, but our comfortable blankets gratefully reassured us that we were not to repeat that experience.

We were up early again the next morning and investigated the oak where he had heard the Pigmy Owls, but found nothing. Various other trees with holes in them were examined with no better results, so we turned our attention to breakfast and after finishing it, helped Chrisman pack up and start, as we

were to reach the summit that day and the trail was a long, hard one. We then went down to the Zone-tail's nest, which Howard climbed. The female left the nest as he ascended, and alighted on a nearby hillside where she kept up an intermittent screaming, ably seconded by her mate who had come at the first alarm. The nest was seventy-eight feet from the ground, was composed of sticks with a few green leaves for lining, and contained two incubated eggs. This was a strictly characteristic nest.

We hurried on after Chrisman, and spent several toilsome hours climbing the trail. At one point it was so steep that he had to go up ahead with a rope and steady the horses to keep them from falling over backward as they climbed. After passing this place we were soon at the edge of the pines. Painted Redstarts greeted us, but were not yet nesting though it was late for them. This was due no doubt to the dry season, for they usually begin nesting in April. Some Long-crested Jays, Western Flycatchers, and several other common species were met with. In a small weed growing on a perpendicular wall of rock we found a nest of Broad-billed Hummingbird (*Cynanthus latirostris*) with two dried-up eggs. This was the only nest of this species found on the trip.

As we got up among the pine trees the needles made walking very difficult. They covered the trail with a coating as slippery as ice. On one zigzag portion three white-tailed deer jumped up, and, with amazing ease, tore away across the mountain side and out of sight. A little later a series of excited yelps attracted our attention, and four more deer went by, with the little yellow camp dog following. About four o'clock we topped the ridge and were rejoiced to hear that "Bear Wallow cabin" was a scant mile farther up. A beautiful pine and fir forest covered the whole mountain top with giant trunks, many of which were over four feet in diameter and a hundred feet tall. As we passed Bear Wallow spring a flock of about thirty Western Evening Grosbeaks flew up from their evening drink and scattered among the nearby trees. A hundred yards farther and we were at the cabin. The guide had already arrived and the horses were grazing nearby, hobbled and belled. A fire was soon going, and while supper was cooking we prepared the bunks. A goodly supply of blankets was already in the cabin, and we were glad to have the extra number as the air was very cold at this altitude of over 8000 feet.

We were up at daylight the next morning and out among the trees by sunrise. The Western Evening Grosbeaks were again at the spring when I went for a pail of water. A thin film of ice was on the shallow pool. Ruby-crowned Kinglets and Audubon Hermit Thrushes were singing in several directions. Starting out after breakfast, we soon had our attention arrested by a pair of Evening Grosbeaks fighting some Long-crested Jays. We located and collected their nest as I have recorded in a former article (see CONDOR XII, 1910, p. 60). Several completed nests of Audubon Hermit Thrush (*Hylocichla guttata auduboni*) were found, some a few feet from the ground in small fir trees, and one in a hollow of a rotten pine stump. None of them held eggs, and all were deserted subsequently as Howard discovered on returning early in June. Chestnut-backed Bluebirds and Arizona Juncos were fairly common, as were the Pigmy Nuthatches, of which we found several nests with young. Our greatest surprise was a family of Clarke Nutcrackers (*Nucifraga columbiana*), two mature birds and three fully fledged young almost as large as their parents. The young birds

were foraging industriously for themselves, but were given occasional bits of food by their elders. They were very tame, and allowed me to come within a few yards before flying. Warblers were quite scarce. We saw a few Black-fronted and Olive warblers but no Red-faced.

During our hunting we continually heard Kinglets (*Regulus calendula*) in the tops of high trees. We found one partly built nest, and a little later Howard saw a bird fly into a bunch of long moss, about sixty feet up in a slender dead fir tree. He came beaming, to report, and right after dinner we went up to the tree, which he struck with his hatchet. A little mite of a bird darted out of the moss and away. Howard climbed up and found the nest, completely hidden among the cluster of dead twigs overgrown with moss. With considerable difficulty he got the eggs out from among the twigs and into his mouth, and I counted eight as he made the transfer. Then he fastened a small rope to the branch and, cutting it off, lowered it to me. The nest was a beautiful object in its setting of grey moss and twigs. The eight eggs were fresh; the date, May 25. The next morning I saw a Kinglet gathering moss or grass from the ground and carrying it into the extreme top of a tall fir. We did not climb to this nest, however.

About three o'clock that afternoon we set out on our return trip. Our shoes were nearly gone and my shirt was little more than a neck band. Driving the horses ahead of us we hurried down, but even though we hurried it was after nine o'clock before we got into camp, too tired to do more than go to bed. The next morning we were up at 4:30, and, after some repairs to our shoes, and a hasty breakfast, started down the canyon to collect a set of eggs from the nest of a Gray Vireo we had previously discovered. We also took sets of Costa Hummingbird and Lucy Warbler. A set of Western Gnatcatcher previously discovered was still incomplete. We got back to camp early, and packed our nests in boxes, for Foran to bring out in his wagon, as he was going to Tucson the next day. We were glad to be relieved of such a load, as they made quite a large bulk altogether.

This day had nearly finished our shoes, so next morning, the 28th, the prospect of a twenty-one mile hike over a rocky trail made us realize the necessity of some further repairs. An old bootleg, a piece of canvas from an old tent, some nails and cord furnished the means, and lasted nearly half the trip back. The balance of the trail was negotiated very carefully. I found another nest of Arizona Cardinal before we started, and about a mile from camp a Zone-tailed Hawk left her nest in a small cottonwood, containing a beautiful set of two fresh eggs. This was evidently the second laying of a pair whose nest Howard had found on the first trip. A set of Cooper Hawk eggs was taken from a nest in a vine-covered oak. About three o'clock we reached our wheels, and then loafed along toward Tucson with the idea of arriving after dark. Strenuous is the word that best describes the ten days we had just passed. A hot bath and a good dinner made us both feel fit for our trip among the giant mesquites and cactus the next day, but that is another story.

Tombstone, Arizona, March 14, 1916.

BIRDS SEEN IN THE VALLEY OF THE SOUTH FORK OF THE FLATHEAD RIVER, MONTANA

By NORMAN de W. BETTS

WITH ONE PHOTO BY THE AUTHOR

DURING the summer of 1915 I made a pack trip of seventy-five miles up the South Fork of the Flathead River. Inasmuch as I do not find very many published references to the birds of that particular region, the following brief notes on the bird-life encountered may prove of interest and worthy of record. My companion, Dr. J. H. Walton, and myself left



Fig. 43. THE SOUTH FORK OF THE FLATHEAD RIVER, MONTANA

Columbia Falls August 15 and returned September 9. The camp sites referred to in the notes are located as follows with regard to Columbia Falls: Riverside, 20 miles; Coalbank, 40 miles; Cabin Parks, 55 miles; Spotted Bear, 65 miles; and the Gorge, 75 miles. Conditions were not ideal for an intensive study of bird-life. Owing to the time of year birds were very quiet; while on the trail there was little opportunity to run down those not in clear view; and no collecting was done for the elucidation of subspecific identities. While quite familiar with the bird-life of the mountains of Colorado, this section was new to me, and I have not, therefore, given subspecific names where there appeared reason to doubt the form belonging in the region.

The valley of the South Fork is one of the large unoccupied forested

regions of the Rockies, and its avifauna has probably been little changed through human agencies. At Riverside the elevation of the river is about 3200, and at Cabin Parks about 3500 feet. The mountains enclosing the valley rise to about 8000 feet. Western larch and Douglas fir are the principal tree species, with a mixed stand of western white pine here and there, and with Engelmann spruce at the higher altitudes. Open burns and grassy mountain parks occur quite frequently, though the valley is essentially a forest covered region.

Mergus americanus. Merganser. Common in small flocks. Seen at Coalbank, Cabin Parks and Spotted Bear. One flock of seven appeared at camp, attracted by trout entrails thrown into the river. Their ability as swimmers was well demonstrated by the ease with which they made headway against the swift current of the river.

Helodromas solitarius cinnamomeus. Western Solitary Sandpiper. Two birds seen at Cabin Parks.

Actitis macularia. Spotted Sandpiper. Common along the river at all camps.

Canachites franklini. Franklin Grouse. The "Fool-hen" was quite common along the main trail and elsewhere.

Bonasa umbellus, subsp. Ruffed Grouse. The Ruffed Grouse was nearly as common as the Franklin, and found frequenting the same localities.

Buteo borealis calurus. Western Red-tail. One seen at Riverside.

Haliaeetus leucocephalus leucocephalus. Bald Eagle. One seen near Riverside.

Accipiter velox. Sharp-shinned Hawk. One found dead in the trail near Coalbank.

Falco sparverius, subsp. Sparrow Hawk. One seen at Hungry Horse Ranger Station near Riverside.

Pandion haliaetus carolinensis. Osprey. Well distributed along the river. Two old nests were noted.

Otus asio, subsp. Screech Owl. The familiar calls of screech owls were heard at Cabin Parks and Spotted Bear.

Bubo virginianus, subsp. Western Horned Owl. The hooting of Horned Owls was heard several times. Presumably *pallascens*.

Ceryle alcyon alcyon. Belted Kingfisher. Common all along the river.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker. Common along the river trail, and noted at 6500 feet in Silver Basin.

Picoides arcticus. Arctic Three-toed Woodpecker.

Picoides americanus dorsalis. Alpine Three-toed Woodpecker. Both species of the three-toed woodpeckers were quite common in the vicinity of Coalbank where there was considerable bug-infested western white pine. Two of the Arctic Three-toed Woodpeckers were also seen at Cabin Parks.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. One bird seen in a clump of aspen at Spotted Bear.

Phloeotomus pileatus abieticola. Northern Pileated Woodpecker. Quite common and well distributed throughout the valley.

Colaptes cafer collaris. Red-shafted Flicker. Common along the main trail.

Chordeiles virginianus henryi. Western Nighthawk. Common at all camps.

Swift. Swifts were seen flying overhead at Cabin Parks but were not identified.

Tyrannus tyrannus. Kingbird. One seen at Riverside. Flycatchers of any type were notably lacking throughout the trip.

Cyanocitta stelleri annectens. Black-headed Jay. A few were seen at Coalbank and Riverside. Not numerous.

Perisoreus canadensis capitalis. Rocky Mountain Jay. Common.

Corvus corax sinuatus. Raven. Common and very noisy. Usually seen close to the river.

Nucifraga columbiana. Clarke Nutcracker. Common and noisy.

Molothrus ater ater. Cowbird. One which was seen at Coalbank persisted in alighting on the backs of the horses.

Pinicola enucleator montana. Rocky Mountain Pine Grosbeak. Two seen in Douglas fir on Spotted Bear Mountain.

Carpodacus cassinii. Cassin Purple Finch. One seen at Coalbank.

Loxia leucoptera. White-winged Crossbill. One male and two females were seen

at Riverside. They were very tame, and twice alighted on our hats. Montana is somewhat south of their usual breeding range, but the date on which these birds were noted, August 18, seems rather early for migration.

Spinus pinus. Pine Siskin. Noted in two places, Cabin Parks and on Mt. Baptiste at 6500-7000 feet.

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. A few seen in the grassy meadows at Cabin Parks, and at Spotted Bear.

Junco hyemalis, subsp. Junco. Small flocks of juncos were common as far as Cabin Parks. They closely resembled *mearnsi*, but may have been *montanus*, with which form I am not familiar.

Petrochelidon lunifrons lunifrons. Cliff Swallow. A flock was noted August 21 a few hundred feet below the top of Mt. Baptiste (8400 feet), at about timberline. Probably migrants.

Dendroica auduboni auduboni. Audubon Warbler. Small bands of this warbler were common, and formed the only indication of warbler migration.

Geothlypis trichas occidentalis. Western Yellow-throat. One seen at Cabin Parks.

Wilsonia pusilla pileolata. Pileolated Warbler. One seen near Spotted Bear.

Cinclus mexicanus unicolor. Dipper. Common all along the river, and heard singing several times.

Nannus hiemalis pacificus. Western Winter Wren. Common along the trail.

Certhia familiaris montana. Rocky Mountain Creeper. Noted here and there; not uncommon.

Sitta canadensis. Red-breasted Nuthatch. Common. Its note was one of the characteristic bird sounds of the valley.

Penthestes atricapillus septentrionalis. Long-tailed Chickadee. Common along the trail at least as far as Coalbank.

Penthestes gambeli gambeli. Mountain Chickadee. Noted at Silver Basin and Spotted Bear Mountain at about 6500 feet.

Penthestes hudsonicus hudsonicus. Hudsonian Chickadee. Two were seen on Spotted Bear Mountain in the Douglas fir forest at about 6500 feet.

Penthestes rufescens rufescens. Chestnut-backed Chickadee. A few noted at Coalbank in the same region frequented by the Long-tailed Chickadees.

Regulus satrapa, subsp. Golden-crowned Kinglet. Common and well distributed.

Planesticus migratorious propinquus. Western Robin. Seen only at Riverside and Spotted Bear.

Ixoreus naevius (meruloides?). Varied Thrush. One bird seen twice near Coalbank under excellent conditions for observation. It was carrying a grub on one occasion as though feeding young.

Madison, Wisconsin, April 16, 1916.

THE SAHUARO SCREECH OWL AS A RECOGNIZABLE RACE

By H. S. SWARTH

(Contribution from the University of California Museum of Vertebrate Zoology)

THE SAHUARO Screech Owl (*Otus asio gilmani*) described by the present writer some years ago (Univ. Calif. Publ. Zool., 7, 1910, p. 1), although admitted to the list of North American birds by the A. O. U. Committee, has been denied recognition by the latest monographer of the genus, Robert Ridgway, in his *Birds of North and Middle America* (part 6, 1914, p. 702, footnote). Here the conception of two subspecies of *Otus asio* existing in southern Arizona is objected to in no uncertain terms. The expression of such positive statements of fact and opinion, from so competent an authority, is certainly worthy of the most respectful consideration, and I must confess, upon first reading this criticism, to feeling decidedly unsettled in my convictions, and to wondering if perhaps my own conclusions had not been erroneous.

This feeling was measurably heightened by the receipt in November, 1915, from Mrs. J. W. Wheeler, of Tucson, Arizona, of a freshly killed screech owl, secured by her in the vicinity of her home on the outskirts of that city. This bird, taken within the range of *Otus asio gilmani*, was remarkably like *O. a. cineraceus* in appearance, in fact I was unable to see that it differed in any way from the one or two examples of that form that were then available for comparison. This fact, coupled with Ridgway's statement of his inability to distinguish between the two forms, while tending to shake my previous conviction of their distinctiveness, impelled me to look into the matter as thoroughly as circumstances permitted.

During the past winter Mr. A. B. Howell, of Covina, California, has devoted several months to field work in the vicinity of Tucson, his collection including a series of seven screech owls from that region. These specimens he has kindly loaned me. Mr. J. Eugene Law has similarly placed at my disposal nine Arizona screech owls contained in his collection. These series together with the specimens at the Museum of Vertebrate Zoology, give a total of thirty skins, from the following points: Chiricahua Mountains, 6; Huachuca Mountains, 3; Tucson and Fort Lowell, 12; Phoenix, 2; Blackwater, 2; points on the Colorado River, from Fort Mohave to Yuma, 5.

The most cursory examination of this assemblage is sufficient to show that there are two types of coloration exhibited, the darker, clearer gray *cinereus*, with coarser markings and extension of black areas, and the paler *gilmani* with much finer pencillings. A preliminary division of specimens according to color, and without consulting labels, was readily accomplished, but it was a somewhat disconcerting result to find in the *cinereus* group four skins from a point within the habitat of *gilmani*. These were, the one bird referred to above (Swarth coll. no. 10051, female, Tucson, Arizona, November 20, 1915), and three others from the Howell collection, all from Fort Lowell, near Tucson (no. 6205, male, December 26, 1915; no. 6245, female, January 4, 1916; no. 6299, female, January 24, 1916). These birds are, as far as I can see, indistinguishable in color and markings from specimens taken in the Chiricahua and Huachuca mountains, and if similar skins from lowland localities have been used by others in making comparisons I can well understand why the subspecies *gilmani* might be discredited thereby.

The point to be made here, however, is that these four are all winter birds, taken at the immediate base of a high mountain range, a range that should be, and probably is, inhabited by *cinereus*. The inference to be drawn is, as I believe, that they are individuals whose summer home lies at higher levels, that they are, in fact, examples of *cinereus* which have migrated downward into the range of *gilmani*.

Taking the evidence presented by this series as a whole, we have the following facts: There are two distinct types represented, *cinereus* from the higher mountains, *gilmani* from the valleys of southwestern Arizona. Breeding birds from either region are true to type in their appearance. Extremes of the *gilmani* characteristics appear at points farthest from the known range of *cinereus* (as at Phoenix and on the Colorado River). At one point at the margin of the habitat of *gilmani* (as I conceive it) there occur in winter examples of *cinereus*.

There are certain facts in the distribution of screech owls in Arizona which deserve to be emphasized. My conception of *Otus a. gilmani* is of a bird of the hot Lower Sonoran valleys, and of *Otus a. cinereus*, as one pertaining

Berkeley, California, June 20, 1916.

A NEW RUFFED GROUSE, FROM THE YUKON VALLEY

By JOSEPH GRINNELL

(Contribution from the University of California Museum of Vertebrate Zoology)

SOON AFTER the establishment of the California Museum of Vertebrate Zoology, in 1908, there came into its possession the C. L. Hall collection of birds from Alaska and Yukon Territory. Two papers have already been based upon these (see CONDOR, XI, 1909, pp. 202-207, and CONDOR XII, 1910, pp. 41-43), but even so, the possibilities of further systematic interest were not by any means exhausted. There were contained in the Hall collections, among other things of note in this regard, a series of eleven Ruffed Grouse from the Yukon Valley, as now listed in the accompanying table of measurements. These were from the beginning recognized as differing materially from Ruffed Grouse available from other parts of North America. But until recently no opportunity has been had of comparison with topotype specimens of the already known race *umbelloides*, under which name Alaskan Ruffed Grouse have always been listed in literature.

The type-locality of *Bonasa umbellus umbelloides* (Douglas) is probably in Alberta, Canada, somewhere on one of the sources of the Peace River, latitude 54 degrees (A. O. U. Check-list, 1910, p. 140). A few weeks ago I was privileged to examine seven skins of the Ruffed Grouse in the U. S. Biological Survey collection in Washington, from Edmonton, Alberta, and six in the U. S. National Museum from Henry House, Alberta. These may be considered near-topotypes of true *umbelloides*, and they were found to differ en masse in certain significant respects from Yukon birds, so that it now becomes feasible to give the latter a separate name.

Bonasa umbellus yukonensis, new subspecies.

YUKON RUFFED GROUSE

Type.—Male adult, no. 4515, Mus. Vert. Zool.; Forty-mile (on Yukon River near Alaska boundary), Yukon Territory; November 5, 1899; collected by C. L. Hall; orig. no. 127.

Diagnosis.—Largest and palest of the races of *Bonasa umbellus*; nearest like *B. u. umbelloides*, but general coloration of light-colored parts of plumage more ashy, and pattern of dark markings finer.

Geographical Distribution.—As far as now known only the interior of Yukon Territory and Alaska. Occurs along the Yukon River valley down nearly to its mouth, as also in adjacent wooded areas west even into the Seward Peninsula (see Nelson, Rep. Natural History Coll. Alaska, 1887, p. 131).

Remarks.—As with the other subspecies of the Ruffed Grouse, *yukonensis* shows two color phases. Three out of the eleven specimens at hand have pale rusty tails; but even in this "red" phase the race is distinguishable from the corresponding phase in the other subspecies by paler tone of coloration. Typical *umbelloides* is still a gray bird, but its grayness is more leaden, and its browns and blacks are deeper. The extreme fineness of the intricate pattern of barring and mottling on the plumage is in *yukonensis* an appreciable character.

MEASUREMENTS IN MILLIMETERS OF ELEVEN SPECIMENS OF *Bonasa umbellus yukonensis*

No.	Sex	Locality	Date	Wing	Tail	Tarsus	Culmen
4509	♀	Forty-mile, Y. T.	Oct. 18, 1899	185	132	45.5	16.2
4505	♂	" "	Nov. 5, "	190	136	45.2	16.2
4508	♂	" "	Oct. 18, "	188	151	44.0	15.7
4511	♂	" "	Nov. 15, "	188	156	46.4	17.2
4512	♂	" "	Oct. 30, "	192	150	47.1	16.0
4513	♂	" "	Oct. 12, "	192	154	46.3	—
4515*	♂	" "	Nov. 5, "	195	155	48.3	17.1
4514	♂	Russian Mission, Alaska	Oct. 11, 1894	188	164	46.6	16.3
4510	♂	Fort Yukon, Alaska	Sept. 24, 1895	178	149	42.0	15.9
4507	♂	" " "	" " "	182	138	41.9	14.4
4506	♂ (?)	Yukon River (Alaska?)		192	156	44.3	16.7

*Type

*Berkeley, California, June 18, 1916.*MIGRATION AND FIELD NOTES FROM
FRESNO COUNTY, CALIFORNIA

By JOHN G. TYLER

Podilymbus podiceps. Pied-billed Grebe. In Pacific Coast Avifauna No. 9, page 13, I recorded this grebe as possibly occurring in winter. It has since proven to be a fairly common winter visitant and also breeds regularly. Specimens of birds and eggs have been examined. I have found the Eared Grebe breeding but have not as yet detected it during the winter months.

Sterna forsteri. Forster Tern. This species is a common summer visitant to suitable places in the valley, but I had not observed the date of arrival in the spring until the past season, when large numbers were migrating northward in small squads averaging 7 or 8 birds each, on April 16 and 17, 1914. This was in the vicinity of Summit Lake.

Querquedula cyanoptera. Cinnamon Teal. This friendly little duck bred in considerable numbers at a great many points in the vicinity of Fresno, young of various sizes being seen all through May and June, 1915. The broods usually numbered four or five and only occasionally more, the largest seen being of ten very small birds. This is the only variety of duck of my acquaintance in which the males attend the females and young. In many cases the drake is more solicitous than his mate and shows great distress when the young are disturbed. It is seldom that both parents are not seen caring for the young.

Spatula clypeata. Shoveller. Several pairs of Shovellers nest each season around a willow-margined, but somewhat alkaline, pond near Riverdale. A female with 7 or 8 small young was seen on May 23, 1915, showing that the species nested later than some of the other ducks, as on the same day large floppers of *Dafila acuta* were noted.

Erismatura jamaicensis. Ruddy Duck. I have often thought there must be a rather large proportion of non-breeding birds among our summer groups of this species. Perhaps the Ruddy does not breed until it has attained the age of several years. At one pond, where about twenty of these little ducks remained all through the summer, I could not find a single nest, although the one patch of tules was searched repeatedly and persistently. At another small pond where three pairs were seen I was positive that only one nest was ever built. This contained four clean eggs on May 4, 1915, and the set had been completed by May 12 with the addition of two more eggs. Indeed, the nest was so small that it could not have accommodated more, and the weight of the six partly submerged the bottom of the nest which was built in the tules over water. All of the eggs were badly stained.

Lobipes lobatus. Northern Phalarope. This species was recorded in Pacific Coast avifauna No. 9, page 24, although the bird mentioned was not collected. I am now able to confirm the occasional appearance of this species and have a specimen in my collection taken May 24, 1915, along the Madera road, about halfway between that city and Firebaugh. Mr. J. E. Law and I discovered the bird at the edge of a small pond near the road, where it had evidently remained from necessity rather than choice, as one wing was nearly severed from its body. This injury was no doubt the result of coming in contact with the telephone wires overhead. The bird was a male in breeding condition and plumage although the withered appearance of the injured member indicated that the accident had occurred some time earlier in the season. How the bird had escaped predatory birds and mammals is a mystery.

Recurvirostra americana. Avocet. Avocets arrived early in the spring of 1914, several pairs being noted by March 20. April 20 I found a female with four young at least a week old. They were in a small pond near Helm. October 15, 1915, about twenty-five avocets, all in winter plumage, were seen in a shallow pond near Riverdale.

Himantopus mexicanus. Black-necked Stilt. The spring of 1914 showed a very early migration on the part of this, as well as several other, species. Five stilts appeared at a pond near Fresno on February 11, and four were seen at the same place on March 9. Early migration was followed by early nesting, and in one colony several birds were occupying nests on April 26. At one pond this species was still present on September 26, 1914; but a subsequent visit showed them to have all disappeared. The first *Himantopus* for 1915 was noted on March 11, and by the 21st of the same month they had become fairly numerous.

Gallinago delicata. Wilson Snipe. About an hour before sunset on June 8, 1915, Mr. Chas. E. Jenney and I observed a snipe perched on a "no shooting" sign that had been nailed to the top of a fence post on the Burleigh ranch about six miles south-west of Fresno. The bird was either asleep or engaged in profound meditation and we approached within fifteen feet before he twisted away across the overflowed salt grass pasture. Although at a much lower elevation than most of the recorded breeding stations, it would not surprise me to learn that during favorable seasons an occasional pair of Wilson Snipe remains to nest among the Stilt colonies around the Sewer Farm.

Totanus melanoleucus. Greater Yellow-legs. This wader has proven to be a very common spring migrant, and possibly winters sparingly, as I have one record for February 19, 1912; but it occurs much more commonly during mid-April. Some flocks return very early in the fall and I noted quite an assemblage near White's Bridge July 5, 1915, associating with about an equal number of *Ereunetes mauri*.

Podasocys montanus. Mountain Plover. This interesting little plover had arrived on the plains near Firebaugh by September 11, 1915. Had not the Federal law intervened these birds would soon have disappeared forever, as their habits made them a very easy victim for hunters. The birds feed in loose scattered flocks, ranging over much ground, but when sufficiently disturbed all the members of a company take wing and form into a dense flock which, after beating rapidly back and forth for a few moments, usually settles again within a few yards of the intruder, a full hundred birds often occupying a space no larger than twenty feet in diameter. As they alight each bird flattens itself upon the ground where its protective coloration renders it all but invisible save for the winking of its very large eyes.

As one old resident stated, a favorite method of hunting was to drive with a horse and buggy among the scattered birds and cause them to take wing, whereupon the horse was brought to a standstill until the birds had again settled on the ground and in nearly every case this was within easy gun range. The hunter immediately "ground sluiced" them with one barrel just as they "squatted" and fired again as the survivors took wing.

My informant stated that he once killed sixty-five birds with two shots and this method very rarely netted less than thirty. I was informed that this plover was rated as the best table bird in this part of the State and that parties sometimes came from points as far away as San Francisco to hunt them. Verily, as my friend remarked, "they don't seem to be as plentiful as they were twenty-five years ago."

Lophortyx californica vallicola. Valley Quail. September 15, 1915, a female quail flushed from almost beneath my feet, and I soon found her nest with seven eggs which, from their clean, fresh appearance, were evidently the beginning of a late set. Locality

Selma, California. A female quail shot near O'Neal's, Madera County, on the opening day of the season, Oct. 15, 1911, was found, upon examination to contain well-developed eggs, the largest of which would probably have been ready to deposit within a very few days. Other quail shot on the same day had long since ceased to be in breeding condition.

Columba fasciata fasciata. Band-tailed Pigeon. Several residents of the mountain districts have reported pigeons as being quite common this winter (1915), all through the oak covered foot-hills. One man informed me that in former years an experienced hunter never failed to secure a full bag of pigeons in a day's hunt even though the birds sometimes became rather wary. He further explained that when a flock took wing from a tree, one bird remained in nearly every instance and by approaching slowly this lone bird could easily be taken. As flocks seldom flew far before again alighting, a certain amount of perseverance was the only requirement for accumulating good-sized "limits".

Buteo swainsoni. Swainson Hawk. Several large flocks of this Buteo, choosing a most inopportune time, were migrating southward through the valley when the shooting season for quail and ducks opened on October 15, 1913. Much expensive ammunition was worse than wasted on the low-flying hawks and many a hunter returned home firm in the belief that he had rendered a valuable service by killing several. And the farmers, too, instead of protesting, joined in the sport and in some cases organized automobile parties to hunt hawks out on the plains. Locating a number of these birds perched on the ground they would drive rapidly among them and slaughter them right and left with pump guns as they slowly took wing. Sometimes it is with a feeling akin to grim satisfaction that we note the ever-increasing horde of ground squirrels, pocket gophers and field mice!

Chordeiles acutipennis texensis. Texas Nighthawk. A single Nighthawk—a new arrival from the south—was observed near Firebaugh late in the evening of March 20, 1914, and twelve or more were noted circling over a city park in Fresno on October 4. The former is my earliest spring, and the latter my latest fall, record for this species.

Tyrannus verticalis. Western Kingbird. Latest fall record for 1912, September 23, for a single bird. For 1913, October 2, when two were seen. My earliest spring record is March 6, 1914, for a single bird near Sanger.

Petrochelidon lunifrons lunifrons. Cliff Swallow. A large colony was found nesting in an open cave among the lava caps on a mountain west of Friant, Madera County, last spring. On April 3, 1915, nearly all of the nests contained full sets of eggs, some, at least, being partly incubated. This is rather early nesting. I have never seen this species in the spring earlier than March 13 (1913). October 21, 1915, I noticed a large migrant flock of Cliff Swallows near Sanger.

Hirundo erythrogastra. Barn Swallow. My earliest date of spring arrival is March 4, 1914. Last spring (1915) they did not arrive until March 12, when two pairs were seen. The previous season they were quite common by that date.

Fresno, California, December 15, 1915.

FROM FIELD AND STUDY

Early Nesting of the Lutescent Warbler in Los Angeles County.—April 1, 1916, I found a nest of this bird containing six eggs, in Franklin Canyon, near Los Angeles. It was impracticable to collect bird, nest or eggs at that time; and four days later, on again visiting the spot, the nest was found destroyed and no sign of bird or eggs. There is no possible question as to the identity of the bird, as when I started it from the nest it "fussed" around me for ten minutes or more, a part of the time within eight feet of where I sat beside the nest. To make more certain, I moved away a few yards, when the bird returned to its eggs, and started a second time when my face was within three feet of the nest. Apparently this is a record for early breeding, as well as for the large number of eggs.—L. E. WYMAN, *Museum of History, Science and Art, Los Angeles, California.*

Decoys Used by Market Hunters in Slaughtering Band-tailed Pigeons.—On a recent visit to Paso Robles, San Luis Obispo County, I was informed how easily the Band-tailed Pigeon had been slaughtered by the simple device formerly used to decoy the Passenger Pigeon. The method was to fasten a dead or half-dead pigeon on a stick or wire in the top of one of the oak trees where the birds commonly congregated, the decoy being placed quite high where it would easily be seen. This decoy would lead flock after flock to the slaughter, the market hunter being able to kill all he wanted without moving from the tree.

I think that before there is once more an open season on the Band-tailed Pigeon it would be wise to have legislation enacted prohibiting the use of decoys, and thus in a measure guard against a repetition of this former disgraceful method of slaughter.—W. LEE CHAMBERS, *Eagle Rock, California*.

Nesting of the Western Robin in San Francisco County.—On May 31, 1915, I saw a male Western Robin (*Planesticus m. propinquus*) near the western portal of the Twin Peaks Tunnel. The bird had something in its beak which I took to be food for nestlings. On June 5 of the same year I saw another bird of this species near Strawberry Hill in Golden Gate Park. These observations led me to suspect that the Western Robin was nesting on the seaward side of the San Francisco peninsula. Accordingly in April and early May of the present year I made a somewhat thorough investigation of the St. Francis Wood region and of the territory around Strawberry Hill. These efforts were, however, without result.

On May 17, of the present year I was looking around the gardens on Sutro Heights when a male robin alighted within a few feet of where I was standing. A few minutes later a female appeared with food in her bill. I remained quiet until she flew to her nest in a Monterey cypress. As she alighted on the nest four or five young birds raised their heads and clamored for the food. The same day I saw another robin at the Chain of Lakes in Golden Gate Park.

I believe this is the first time the Western Robin has been found nesting in the bay region. The nearest station heretofore reported is, I believe, San Geronimo, Marin County, reported by J. and J. W. Mailliard. While the Western Robin has always seemed to be much more a bird of the wilds than its eastern cousin, may it not be that it is slowly changing its habits and seeking closer relationship with man?—W. A. SQUIRES, *San Francisco, California*.

The Western Robin Nesting in Golden Gate Park, San Francisco.—On April 16, 1916, while walking around the Chain of Lakes, in the western part of Golden Gate Park, San Francisco, my attention was attracted by a pair of Western Robins (*Planesticus migratorius propinquus*) which were carrying building material to a Monterey cypress about thirty feet from a small arm of North Lake. No attempt was made to find the nest at this time, for fear of driving the birds away. On April 20 the nest was located on a limb eight feet from the ground and almost overhanging one of the main boulevards. Dried grass was mostly used in the construction, with a little string and the usual mud plastering around the rim. The eggs had not been deposited at this time. On May 2 I again visited the nest, in company with Mr. H. C. Bryant, who took several photographs of it. It now contained three eggs well along in incubation. Four more uncompleted nests were found in the near vicinity. Remnants of a last year's nest were shown us by Mr. Jesse Klapp, the park game warden, who also informed us that to his knowledge robins have nested in the park for the last three years. On May 12 I found that the nest under observation had been robbed.

On May 15, a nest containing young, was found in a growth of Australian Tea Bush, bordering a bridle path. When visited again, with Mr. Klapp, on May 17, the young were found dead. We were unable to determine whether this had been caused by cold weather, or by the depredations of some animal. Later five other nests were located, of which two contained young, two were inaccessible, and the other was deserted.

There appears to be no other record of the nesting of the Western Robin near the coast south of San Francisco Bay. Why the pines and cypresses of Monterey County are not likewise attractive is difficult to understand. Doubtless food supply is the important limiting factor which comes into play in this case. Whether the increase of

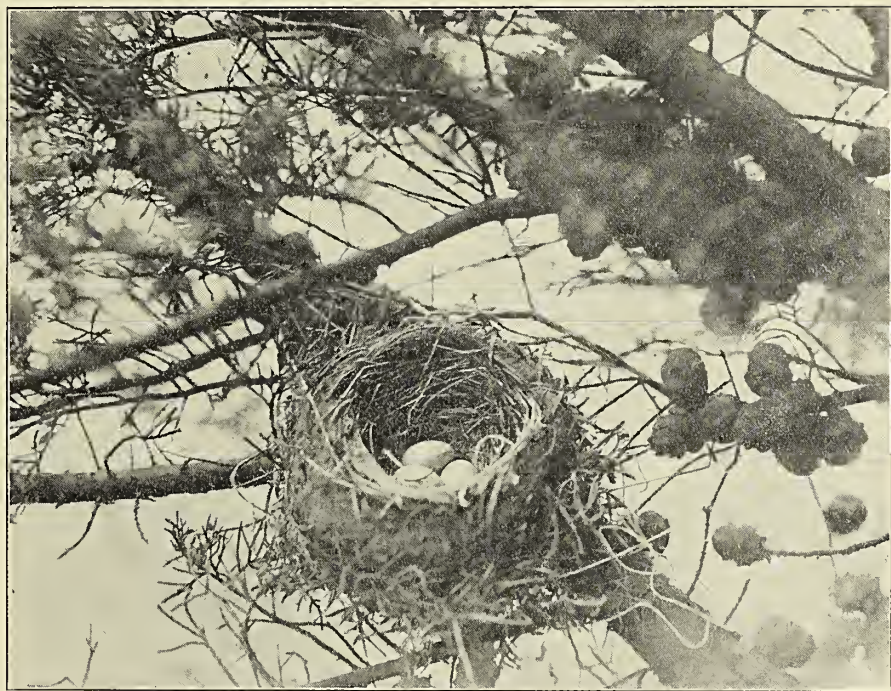


Fig. 44. NEST OF WESTERN ROBIN IN GOLDEN GATE PARK, SAN FRANCISCO; MAY 2, 1916

conditions similar to those in Golden Gate Park will lead to the establishing of additional breeding colonies of robins, as has been the case with juncos, remains to be seen. —HAROLD E. HANSEN, *San Francisco, California*.

A Recent Record of the Trumpeter Swan in the State of Washington.—Reports and sight records of the Trumpeter Swan (*Olor buccinator*) have always been much more plentiful for Washington than actual specimens. Therefore, about three years ago, I was greatly interested to have Mr. Fred Edwards, our Tacoma taxidermist, report to me that an unusually large swan had been sent in to him for mounting. It was shot on, or about, November 9, 1912, the locality being Moses Lake, Douglas County, Washington. The sex was not ascertained, but the bird had not yet reached the mature white plumage. After comparing it with a number of Whistling Swans (*Olor columbianus*) that were brought in, both Mr. Edwards and I felt positive that it was a Trumpeter. The bird is now in the possession of Mr. George Willett, of Los Angeles, California, who writes me that he is perfectly satisfied as to its identity. Measurements, furnished by him, are as follows, in inches and hundredths: Length of wing, 25; tarsus, 4.12; middle toe and claw, 6.36; eye to tip of bill, 5.36; nostril to tip of bill, 2.55. Number of tail feathers, 22.—J. H. BOWLES, *Tacoma, Washington*.

Notes from Goleta, Santa Barbara County, California.—

Larus brachyrhynchus. A male in adult plumage taken November 27, 1915.

Totanus flavipes. A male of the year taken August 11, 1915. It was feeding with a flock of Western Sandpipers (*Ereunetes mauri*) in a shallow tide-water lagoon.

Steganopus tricolor. A male of the year taken August 1, 1915. It was likewise feeding in the same lagoon with a flock of Western Sandpipers. The mixed flock also contained a Baird Sandpiper (*Pisobia bairdi*).—ADRIAAN VAN ROSSEM, *Los Angeles, California*.

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EDITORIAL NOTES AND NEWS

Attention of persons especially interested in game conservation is urgently called to the proposed new regulations for the protection of migratory birds, printed on this and following pages. Some significant changes will be noted when comparison is made with the regulations up till now in force. Criticisms and comments are invited by the Secretary of Agriculture; these should be forwarded at once.

With the departure of Mr. Walter P. Taylor to join the staff of the Biological Survey in Washington, the ranks of Pacific Coast ornithologists have lost a useful member. While Taylor is a relatively young man he has already shown marked ability in field work and in faunistic research. But the particular thing which has qualified his activity has been his concentration upon

the idea of wild life conservation. With a good equipment in general knowledge of natural history, and with a certain civic consciousness—these combined with energy and mental alertness—his influence as re-

gards game and bird protection has been far-reaching. It is needless here to recount the activities of the society which he was mainly instrumental in founding and carrying on, and the results which were with greater or less success attained. References to files of *THE CONDOR* will show many of his reports as Secretary of the California Associated Societies for the Conservation of Wild Life. It seems to us fortunate that Taylor has now entered government service where opportunities for just this kind of work would seem likely to offer in large measure. While for the moment we regret the loss of Taylor's influence here in the West, we can but congratulate him upon his advancement in position and opportunities.

The Cooper Club has sustained a loss in the death of Alphonse Jay, who died from injuries received in an automobile accident on May 25, 1916. Mr. Jay was one of the most active and enthusiastic of bird students in Los Angeles, and he will be sorely missed from the meetings of the Southern Division.

Not long ago a group of California members of the Cooper Ornithological Club were talking informally about the current trend and achievements in ornithology. Some way or another the conversation centered on the relative eminence attained to among living ornithologists, and after much debate the following five were selected as foremost in America in point of scientific output: (1) R. Ridgway, (2) J. A. Allen, (3) L. Stejneger, (4) W. Stone, (5) H. C. Oberholser. It was further concluded, that, as interpreters of our science, in other words, popularizers of ornithology, the following had achieved greatest success, directly or indirectly, in order of merit as named: (1) Frank M. Chapman, (2) Florence Merriam Bailey, (3) John Burroughs, (4) William Dutcher, (5) Louis A. Fuertes.

PROPOSED NEW REGULATIONS FOR THE PROTECTION OF MIGRATORY BIRDS

Pursuant to the provision of the act of March 4, 1913, authorizing and directing the Department of Agriculture to adopt suitable regulations prescribing and fixing closed seasons for migratory birds (37 Stat., 847), having due regard to zones of temperature, breeding habits, and times and lines of migratory flight, the Department of Agriculture has prepared and hereby makes public, for examination and consideration before final adoption, the following regulations:

Regulation 1. Definitions.

For the purposes of these regulations the

following shall be considered migratory game birds:

(a) Anatidae or waterfowl, including brant, wild ducks, geese, and swans.

(b) Gruidae or cranes, including little brown, sandhill, and whooping cranes.

(c) Rallidae or rails, including coots, gallinules, and sora and other rails.

(d) Limicolae or shore birds, including avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plover, sandpipers, snipe, stilts, surf birds, turnstones, willet, woodcock, and yellowlegs.

(e) Columbidae or pigeons, including doves and wild pigeons.

For the purposes of these regulations the following shall be considered migratory insectivorous birds:

(f) Bobolinks, catbirds, chickadees, cuckoos, flickers, flycatchers, grosbeaks, hummingbirds, kinglets, martins, meadowlarks, nighthawks or bull bats, nuthatches, orioles, robins, shrikes, swallows, swifts, tanagers, titmice, thrushes, vireos, warblers, waxwings, whippoorwills, woodpeckers, and wrens, and all other perching birds which feed entirely or chiefly on insects.

Regulation 2. Closed season at Night.

A daily closed season on all migratory game and insectivorous birds shall extend from sunset to sunrise.

Regulation 3. Closed season on Insectivorous Birds.

A closed season on migratory insectivorous birds shall continue throughout each year, except that the closed season on reed-birds or ricebirds in New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, Virginia, North Carolina, and South Carolina shall commence November 1 and end August 31, next following, both dates inclusive: *Provided*, That nothing in this or any other of these regulations shall be construed to prevent the issue of permits for collecting birds for scientific purposes in accordance with the laws and regulations in force in the respective States and Territories and the District of Columbia.

Regulation 4. Closed seasons on Certain Game Birds.

A closed season shall continue until September 1, 1918, on the following migratory game birds: Band-tailed pigeons, little brown, sandhill, and whooping cranes, wood ducks, swans, curlew, willet, and all shore birds except the black-breasted and golden plover, Wilson or jacksnipe, woodcock, and the greater and lesser yellowlegs.

A closed season shall also continue until September 1, 1918, on rails in California and Vermont and on woodcock in Illinois and Missouri.

Regulation 5. Zones.

The following zones for the protection of migratory game and insectivorous birds are hereby established.

Zone No. 1, the breeding zone comprising the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Kentucky, West Virginia, Michigan, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Missouri, Colorado, Wyoming, Montana, Idaho, Utah, Nevada, Oregon, and Washington—31 States.

Zone No. 2, the wintering zone comprising the States of Delaware, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Texas, Oklahoma, New Mexico, Arizona, and California—17 States, and the District of Columbia.

Regulation 6. Construction.

For the purposes of regulations 7 and 8 each period of time therein prescribed as a closed season shall be construed to include the first and last day thereof.

Regulation 7. Closed Seasons in Zone No. 1.

Waterfowl.—The closed season on waterfowl, including coots and gallinules, shall be between December 21 and September 6 next following, except as follows:

Exceptions: In Maine, New Hampshire, Vermont, New York (except Long Island), Ohio, Michigan, Indiana, Kentucky, and West Virginia the closed season shall be between January 1 and September 15;

In Massachusetts, Rhode Island, Connecticut, Long Island, New Jersey, Pennsylvania, Washington, Oregon, Utah, and Nevada the closed season shall be between January 16 and September 30; and

In Illinois, Iowa, Nebraska, Kansas, and Missouri the closed season shall be between March 11 and September 15 and between November 16 and February 9.

Rails.—The closed season on sora and other rails, excluding coots and gallinules, shall be between December 1 and August 31 next following, except as follows:

Exception: In Vermont the closed season shall continue until the open season in 1918.

Shorebirds.—The closed season on black-breasted and golden plover and greater and

lesser yellowlegs shall be between December 1 and August 15 next following, except as follows:

Exception: In Utah the closed season shall continue until the open season in 1918.

Jacksnipe.—The closed season on jacksnipe or Wilson snipe shall be between December 16 and September 15 next following.

Woodcock.—The closed season on woodcock shall be between December 1 and September 30 next following, except as follows:

Exceptions: In Illinois and Missouri the closed season shall continue until the open season in 1918.

Regulation 8. Closed Seasons in Zone No. 2.

Waterfowl.—The closed season on waterfowl, including coots and gallinules, shall be between February 1 and October 14 next following, except as follows:

Exceptions: In Alabama, Arkansas, District of Columbia, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia, the closed season shall be between February 1 and October 31 next following.

Rails.—The closed season on sora and other rails, excluding coots and gallinules, shall be between December 1 and August 31 next following, except as follows:

Exceptions: In Louisiana the closed season shall be between February 1 and October 31; and

In California the closed season shall continue until the open season in 1918.

Shorebirds.—The closed season on black-breasted and golden plover and greater and lesser yellowlegs shall be between December 1 and August 15, next following.

Jacksnipe.—The closed season on jacksnipe or Wilson snipe shall be between February 1 and October 31 next following.

Woodcock.—The closed season on woodcock shall be between January 1 and October 31 next following.

Regulation 9. Hearings.

Persons recommending changes in the regulations or desiring to submit evidence in person or by attorneys as to the necessity for such changes should make application to the Secretary of Agriculture. Hearings will be arranged and due notice thereof given by publication or otherwise as may be deemed appropriate. Persons recommending changes should be prepared to show the necessity for such action and to submit evidence other than that based on reasons of personal convenience or a desire to kill game during a longer open season.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

APRIL.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, April 20, 1916, at eight o'clock, with the following persons present: Misses Davidson, Miller, Swezy; Mesdames Allen, Bryant, Ferguson, Grinnell and Knappen; Messrs. Anderson, Bryant, Cohen, Davis, Evermann, Grinnell, Hansen, Hart, Jacobsen, Joseph Mailliard, Stone, Storer, Swarth and Trenor. Visitors: Mesdames Stone and Swarth, Miss Ferguson and Dr. Waterman.

After the reading of the minutes of the two Divisions and of the Intermountain Chapter, the following were elected to membership: Pirie Davidson, San Rafael; Dr. Frank B. Davis, Oakland; E. N. Hart, Alameda; S. Griswold Morley, Berkeley; Webster Robinson, Los Angeles; Norman H. Wood, Ann Arbor, Mich.; Donald D. McLean, Coulterville; Ed. C. Jaeger, Palm Springs; and Edw. Howe Forbush, Boston. The following names were proposed for membership: Margaret S. Boardman, 3022 Clay St., S. F., by Harold E. Hansen; Joseph J. Webb, 519 California St., S. F., by Miss Amy E. Gunn; De Looch Martin, 1223 S. Washington Ave., Marshall, Tex., by Mr. Carriger; Thomas H. Benton, 2821 Van Buren St., Alameda, and Dr. Morton R. Gibbons, 3979 Washington St., San Francisco, by D. A. Cohen; Mrs. G. Hoag, Anaheim, by H. C. Bryant; Cora Smedburg, Felton, by Margaret Wythe; Dudley S. De Groot, San Francisco, by A. E. Price; Mattie Beth Morgan, Fort Worth, Tex., by J. B. Litsey, Jr.; Charles N. Black, San Francisco, Roland F. Hussey, Ann Arbor, Mich., Ralph E. Dodge, Santa Cruz, and Benj. F. Bolt, Kansas City, by W. Lee Chambers; Aldo Leopold, Albuquerque, N. M., and Mrs. P. H. Winston, Chloride, N. M., by J. Stokeley Ligon.

Mr. Grinnell then offered a resolution relative to the death of Professor Wells W. Cooke (see CONDOR, May, 1916, page 131). This was unanimously adopted and ordered spread on the minutes. Dr. Evermann gave some interesting personal reminiscences of Professor Cooke, telling of his methods of work and of his kindly hospitality.

Letters from the Pacific Division of the American Association for the Advancement of Science were reported by Mr. Storer, urging individual membership in that Association, with initiation fees remitted, and ask-

ing for papers for the San Diego meeting in August.

The Club then listened to a most entertaining account of Indian myths and legends regarding the birds by Professor T. T. Waterman, of the University of California. Many problems as to the creation and its details were settled, the raven playing a very important role in most of the stories.

Mr. Hansen reported Western Robins nesting in Golden Gate Park. Dr. Evermann gave an account of a trip into the mountains back of Ventura and Santa Paula to locate possible nests of the California Condor. He reported that about half a dozen Condors were seen in different localities, but no nests were found. Cactus Wrens and Yellow-billed Magpies, which were found commonly in certain districts near Santa Paula thirty years ago, were not seen on this trip. Adjourned.—AMELIA S. ALLEN, *Secretary*.

MAY.—The regular monthly meeting of the Northern Division was held at the Vertebrate Museum, May 18, 1916, at eight o'clock, with the following members and visitors present: Misses Crane, Culver and Wythe; Mesdames Allen and Knappen; Messrs. Carriger, Cohen, Evermann, Hansen, Squires, Storer, Swarth and Wright; visitors: Misses Moore and Wythe, Mrs. Swarth, Messrs. Benton, De Groot, La Jeunesse and Webb.

The persons whose names were presented at the preceding meeting were elected to membership. The following were newly proposed for membership: Benj. F. Davis, 2525 Piedmont Ave., Berkeley, by Mrs. Mary van E. Ferguson; Mrs. Chas. A. Field, 2547½ Piedmont Ave., Berkeley, by Mrs. Chas. S. Newhall; Mr. H. V. La Jeunesse, 1340 Broadway, Alameda, by Dr. H. C. Bryant; Mrs. M. E. Lombardi, 2331 Le Conte Ave., Berkeley, by Mrs. J. T. Allen; Mrs. Calvert Meade, 202 E. Twelfth St., Oakland, by Mrs. D. W. de Veer; Mr. Chas. T. Vorhies and Mr. T. K. Marshall, Tucson, Ariz., by Mrs. J. W. Wheeler; Miss Ella Jeremy and Mr. James Anthony Mullen, Salt Lake City, by Mrs. A. O. Treganza; Miss Cordelia Johnson Stanwood, Ellsworth, Me., and Mr. John D. Bliss, Santa Monica, Calif., by W. Lee Chambers.

Mr. Storer then read a chapter from the manuscript of the "Game Birds of California", dealing with the Mourning Dove, in which was given a summary of all available data as to the life-history of that species as found in California.

Mr. Squires reported Robins breeding at

Sutro Heights in San Francisco, and Mr. Wright established the right of the Willow Goldfinch to be considered a permanent resident in Berkeley. Adjourned.—AMELIA S. ALLEN, *Secretary*.

SOUTHERN DIVISION

MARCH.—Meeting of Southern Division called to order on the evening of March 30 by President Miller. Minutes of February meeting read and approved, followed by reading of the minutes of the other divisions. Present: Messrs. Miller, Willett, Lane, Chambers, Cox, Brown, Holland, Little, Law, Robertson, Daggett, Zahn, Wyman; Mesdames Robertson, Law and Harmon; Miss Little. Visitors were Messrs. Clark and Greenfield, and Miss Fanny Ford.

On motion of Mr. Robertson, the Secretary was instructed to cast the affirmative ballot of the Club admitting to membership the following persons: Webster Robinson, Los Angeles; Norman A. Wood, Ann Arbor, Mich.; Curtis Wright, Jr., Berkeley; H. W. Daniels, Claremont; Edna A. Hannibal, San Jose; Harold E. Hansen, San Francisco; Donald D. McLean, Coulterville; Edmund C. Jaeger, Palm Springs; and Edward Howe Forbush, Boston, Mass.

New names presented, to be voted on at the April meeting: Mrs. G. B. Hoag, Anaheim, by H. C. Bryant; Miss Alice F. Crane, San Francisco, by S. B. Culver; Mrs. Chas. S. Newhall, Berkeley, by Mrs. J. T. Allen; Miss Augusta H. Blanchard, by S. B. Culver; Cora Smedburg, Felton, by Margaret W. Wythe; Dudley S. DeGroot, San Francisco, by A. E. Price; Mattie Beth Morgan, Ft. Worth, Tex., by John B. Litsey, Jr.; Robert L. Paschal, Ft. Worth, Texas, by John B. Litsey, Jr.; Chas. N. Black, San Francisco, by W. Lee Chambers; Chas. W. Michael, San Francisco, Roland F. Hussey, Ann Arbor, Mich., Ralph E. Dodge, Santa Cruz, and Benj. F. Bolt, Kansas City, by W. Lee Chambers; Wm. C. Jacobsen, Berkeley, by J. Grinnell; Aldo Leopold, Albuquerque, N. M., and Mrs. P. H. Winston, Chloride, N. M., by J. Stokeley Ligon.

A communication from the Pac. Div. of the American Assn. for the Advancement of Science, urging Cooper Club members to join, was read. Pres. Miller stated that he had received a letter also from the same source, relative to a meeting to be held in August in San Diego, as to whether the Cooper Club wished to participate in the program, etc. Enthusiasm on the subject was lacking and the matter was laid on the table.

The Business Managers' report for 1915 was then presented by Mr. Law, who in a brief summary showed a very gratifying condition of the Club's finances. The Club is deeply indebted to Messrs. Chambers and Law for their painstaking labors, and is to be congratulated in having these gentlemen for its business managers.

Then followed a most interesting and instructive address by Dr. Miller on "Fossil Birds of the West Coast", after which Mr. Willett spoke briefly regarding birds at Roosevelt Lake, Arizona. Adjourned.—L. E. WYMAN, *Secretary*.

APRIL.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Museum of History, Science and Art, the evening of April 27, 1916. President Miller was in the chair and the following members present: Messrs. Daggett, Owen, E. J. Brown, W. W. Brown, Holland, Colburn, Chambers, Robinson, Law, and Wyman; Misses Atsatt and Swift. Visitors were Miss Leighton, Mr. and Mrs. Atkins, and Mr. E. E. Harriman.

Minutes of the March meeting were read and approved, followed by reading of the March minutes of the other divisions. On motion of Mr. Law, seconded by Mr. Chambers, the persons whose names were read at the preceding meeting were elected to membership. New names presented were: Chas. T. Vorhies, Tucson, Ariz., and T. K. Marshall, Tucson, Ariz., by Mrs. J. W. Wheeler; Miss Ella Jeremy, and James Anthony Mullen, of Salt Lake City, Utah, by Mrs. A. O. Treganza; Miss Cordelia Johnson Stanwood, Elsworth, Maine, and John D. Bliss, Santa Monica, Calif., by W. Lee Chambers.

Pres. Miller announced that an ordinance, sponsored by the Audubon Society, was about to be presented to the City Council, providing for the licensing and belling of cats. He stated that the executive committee of the Cooper Club had endorsed the movement and asked for approval of the members present, which approval was un-animously given.

On motion of Mr. Law the following resolution was adopted: RESOLVED, that in the death of Professor Wells W. Cooke, whose long years of patient labor have added so greatly to our knowledge of birds and their habits, ornithology has suffered a most severe loss; and that the Cooper Club does hereby deplore his untimely death as a loss not only to the Club collectively, but to each individual member.

Recent field work at Palm Springs, Calif.,

by Messrs. Law and Miller, the Misses Swift and Atsatt, formed an interesting topic of informal discussion. Adjourned.—L. E. WYMAN, *Secretary*.

MAY.—The regular meeting of the Southern Division of the Cooper Ornithological Club was held at the Museum of History, Science and Art, May 25, 1916. President Miller was in the chair, and the following members present: Messrs. Daggett, Howell, Holland, Colburn, Brown, Little, Robertson, Law and Wyman, and Mrs. Law. Visitors were C. W. Chamberlain, of Boston, and Miss Marsh.

Minutes of the April meeting were read and approved, followed by reading of the minutes of the Northern Division. On motion of Mr. Robertson, seconded by Mr. Daggett, the Secretary was instructed to cast the electing ballot of the Club for the persons whose names were proposed at the April meeting.

There being no other business to come before the Club, the members listened to an interesting talk on ornithological conditions in the vicinity of Tucson, Arizona, by Mr. A. B. Howell, who returned some weeks ago from four months of field work in that locality. Messrs. Brown and Colburn spoke on recent field work at San Jacinto Lake, in Riverside County, where some interesting notes were made. Adjourned.—L. E. WYMAN, *Secretary*.

INTER-MOUNTAIN CHAPTER

APRIL.—The Inter-Mountain Chapter of the Cooper Ornithological Club met on the evening of April 12, 1916, at the office of Mr. D. Moore Lindsay, Boston Building, Salt Lake City, Utah. In the absence of both President and Vice-president, Mr. A. O. Treganza opened the meeting at 8:30 P. M. Members in attendance were: A. D. Boyle, J. Sugden, Jr. and Sr., Prof. J. H. Paul, Mr. and Mrs. A. O. Treganza, Mrs. J. A. Mullen, Miss Ella Jeremy and three visitors. Minutes of the March meeting read and approved.

Mrs. A. O. Treganza gave her observations and field data on the nesting ways and habits of the American Avocet. An open discussion followed in which many ideas were projected for the growth and development of the Chapter. Different phases of Ornithology—Scientific, Economic and Popular Ornithology—were also discussed. Meeting adjourned at 10:15 P. M.—MRS. A. O. TREGANZA, *Secretary*.

For Sale, Exchange and Want Column.—In this space members of the Cooper Club are allowed one notice in each issue free of charge.

Notices of over ten lines will be charged for at the rate of ten cents per line. Books and magazines can be offered for sale or exchange; bird skins and eggs can be offered in exchange, but *not for sale*. For this department address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

A CROWDED LIBRARY compels the sale of the following desirable books: Dugmore, *Wild Life and The Camera*, 4to, cloth, Illust., 1912, \$2.00; Knight, *Birds of Maine*, 4to, cloth, Illust., 1912, \$3.00; Dixon, *Our Rarer Birds*, 4to, Illust., 1888, \$1.50; Seton, *The Arctic Prairies*, 8vo., cloth, 1911, hfft. and cuts, \$2.00; Silloway, *Some Common Birds*, cloth, 1897, \$1.00; Bonhote, *Birds of Britain*, many beautiful colored plates, \$2.00; Kear-ton, *Our Rarer British Breeding Birds*, many delightful half-tones, cloth, 8vo, 1899 (cover faded), \$2.00; MacIlwraith, *Birds of Ontario*, 4to, cloth, 1894, \$1.00; Barrows, *Michigan Bird Life*, hfft., cloth, 1912, \$3.00; Zeledon, *List of the Birds of Costa Rica* (in Spanish), paper, 60c; and others.—REV. P. B. PEABODY, *Independence, Iowa*.

FOR SALE—Complete file of *Condor*, including original volume one, unbound. Make me an offer for the set.—H. T. CLIFTON, 509 E. Walnut St., *Pasadena, Calif.*

I WANT to hear from reliable collectors of eggs in sets. Am offering Bald Eagle, Carolina Junco, Cairns Warbler, Bewick Wren, Osprey, Seaside Sparrow and many others. Also a few copies of my book, "Birds of Virginia", for sets, lantern slides or cash.—HAROLD H. BAILEY, 319 54 St., *Newport News, Virginia*.

WANTED—29th and 30th Quarterly Report, Penn'a Board of Agriculture, March, 1886; containing "Birds of Chester County, Penna.", prepared by C. J. Pennock. I will pay any reasonable price.—F. L. BURNS, *Berwyn, Pa.*

FOR EXCHANGE—Very fine skins of Michigan waders and warblers for western or desirable sets.—J. CLAIRE WOOD, 179 17th Street, *Detroit, Mich.*

WANTED—Skins of Flammulated and Dwarf Screech owls in exchange for northern material such as Queen Charlotte Island Jay, Northwestern Sawwhet Owl, Richardson Grouse, Hepburn Leucosticte, Bohemian Waxwing, etc.—J. A. MUNBO, *Okanagan Landing, British Columbia, Canada*.

WANTED—Loomis's *California Water Birds* No. IV, for which I will pay any reasonable cash price.—W. E. CLYDE TODD, *Carnegie Museum, Pittsburgh, Pa.*

BLUE-BIRD—Published in co-operation with The Cleveland Bird-Lovers' Association, and devoted to *Bird Study and Conservation*; \$1.00 a year; 10 cents a copy; *Agents Wanted*. Address EDITOR BLUE-BIRD, 1010 Euclid Avenue, *Cleveland, Ohio*.

TO EXCHANGE—For bird skins not at present represented in my collection: *Coues Key to N. A. Birds*; *Ridgway's Manual of N. A. Birds*; U. S. Executive Document No. 91, *Explorations from Mississippi River to Pacific Coast, 1853-1856, Birds*, by Spencer F. Baird, 995 pages.

Over 50 odd copies of ornithological magazines to exchange as a lot for last four issues of *The Auk*. Viz: 15 copies *Oologist*, Vol. 7 to 13; 15 copies *Osprey*, Vol. 1 to 2; 11 copies *Nidiologist*, Vol. 3 to 4; 10 copies *Museum*, Vol. 1 to 2.—GEO. G. CANTWELL, *Puyallup, Wash.*

WANTED.—Loomis's "California Water Birds" number V; "The Blue Bird," vol. 6, nos. 1 and 2, published at Cincinnati, Ohio, by Dr. Eugene Swope; Bulletin of the Cooper Ornithological Club, vol. I, any odd nos.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California*.

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By JOSEPH GRINNELL

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BIRD-LORE

For October

IS A

Bird Club Number

with articles by Mr. Baynes of the Meriden Club, Dr. Kennedy of the Brush Hill Club, Mr. Floyd of the Milton Club, Mr. Ripley of the Hartford Club, Dr. Allen of the Ithaca Club, and others.

These reports contain information of the utmost value to organizers and conductors of Bird Clubs.

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THE
CONDOR

A Magazine of Western
Ornithology



Volume XVIII September-October, 1916 Number 5



COOPER ORNITHOLOGICAL CLUB

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MORE BIRD NOTES FROM BIG BEAR VALLEY, SAN BERNARDINO MOUNTAINS

By WRIGHT M. PIERCE

WITH FIVE PHOTOS BY THE AUTHOR

THE TIME from June 19 to June 30, 1916, inclusive, was spent in field study by the writer at Big Bear Lake, altitude 6750 feet, in the San Bernardino Mountains, California. Most of the time was taken in working along the south side of the lake and up into the little canyons in that locality. However, trips were made to the east end of Bear Lake and Baldwin Lake, and also to Bluff Lake, 7575 feet altitude. From the some sixty or more species observed, with many nesting records, the following seem to deserve mention.

Colymbus nigricollis californicus. American Eared Grebe. Eared grebes were quite common in many of the little coves and bays, but only two breeding colonies were located on Bear Lake, one of probably forty nests containing from one to eight eggs each in a little bay near the I. S. Ranch found June 22, and another small colony at the east end of Bear Lake, June 26. The nests in the colony near the I. S. Ranch were poorly constructed, almost flat with scarcely any cup, the eggs usually lying in the water, and the whole loose mass rather insecurely fastened to the branches of several fallen pines floating in the water or in the weeds close to the shore. In the water under several of the nests were eggs which had fallen off probably as the birds climbed on their frail nest platforms or left them with undue haste. As many as nine eggs were found under one nest, and I think it safe to say that at least a hundred eggs in this one colony were lodged on the bottom beneath the nests. As we approached in a boat I saw several of the birds hastily covering their eggs before leaving. This was the main breeding colony on Bear Lake; only a few scattered nests were seen in other places and a small colony of perhaps a dozen nests at the east end of the lake. In striking contrast to the nests of the above colony were the nests in a colony of probably two hundred located at the west end of Baldwin Lake, June 25. Here the nests were well built, with a distinct cup, and raised at least four inches from the water. Hundreds of the old birds with young were swimming about just off-shore. A few

nests with eggs were located, one with nine; but from the majority the young had hatched.

Dafila acuta. Pintail. A pair flushed from the marsh grass at the east end of Bear Lake, June 26, but I was not able to locate their nest.

Querquedula cyanoptera. Cinnamon Teal. On June 25, this duck was quite common at the east end of Bear Lake where at least twenty-five pairs were seen. Three or four young about one-third grown were seen here in the marsh grass, but flopped away hurriedly at our approach. This same day one nest was discovered with ten eggs nearly ready to hatch. The nest was in a bunch of marsh grass in very swampy land in a pasture and about a quarter of a mile from the lake proper. The female flushed from the nest, the latter being heavily lined with down feathers. In this pasture there was a large herd of cattle and they had tramped all around the nest; it seemed just luck that the nest had not been destroyed. The same day two or three pairs of these



Fig. 45. NEST, EGGS, AND ONE NEWLY HATCHED CHICK OF SORA RAIL; BEAR LAKE, SAN BERNARDINO MOUNTAINS, JUNE 25, 1916

ducks were seen at the west end of Baldwin Lake, and one destroyed nest was found in the same locality.

Porzana carolina. Sora Rail. In the same meadow where the Cinnamon Teal's nest was found, a nest containing ten eggs and a recently hatched young of the Sora Rail was discovered (see fig. 45). Though just hatched the little dark colored fellow attempted to crawl away when we parted the grass over the nest. I managed to keep him still long enough to secure a photo. The nest was composed of marsh grass closely woven into a cup and completely arched over, making its discovery rather difficult. Further search disclosed another nest with six eggs, a newly hatched young and many egg shells. Also several nests from which the young had hatched were found nearby. Soras were flushed several times. I believe this is the first nesting record for this bird for Big Bear Valley.

Oreortyx picta plumifera. Plumed Partridge. Abundant near Baldwin Lake, June 19; several flocks of young of various sizes seen, from small birds to some nearly half-grown. I saw a flock of very small young, eight or ten of them, at Bluff Lake on June 20, and on June 29, two broods of small young in the same locality. In an open field near the I. S. Ranch store I saw an old bird on June 24, with three small young not over a day old.

Sphyrapicus varius daggetti. Sierra Sapsucker. I located a nest by watching the bird on June 26. The cavity was in the dead top of a large live silver fir about forty-five feet up. The cavity had a small opening and was only 5 or 6 inches deep; diameter, inside, $1\frac{1}{2}$ or 2 inches. The nest held two large young and one smaller dead one. It was hard to see how more than one bird could survive in such a small space, so it was not surprising that the probably weaker bird had apparently been suffocated.

Chordeiles virginianus hesperis. Pacific Nighthawk. Pacific Nighthawks were quite common flying over the east end of Bear Lake as we entered the valley on June



Fig. 46. EGGS OF PACIFIC NIGHTHAWK, IN PLACE; NEAR BEAR LAKE, SAN BERNARDINO MOUNTAINS, JUNE 22, 1916

19. Three sets of eggs were found on the little ridges about one-half mile back from the lake shore and not far distant from Pine Knot Lodge. In the first instance, June 22, the eggs were laid on the bare earth in a cavity scratched out by the bird (see fig. 46). The second set, found June 24, was laid on the leaves and pine needles under an oak tree; and the last set on a little patch of bare earth from which the leaves had apparently been scratched away, also under an oak bush. Incubation was well started in each set. In each instance the eggs were found by flushing the bird, but even then they were rather difficult to locate. Late in the morning on June 30, there were at least a hundred of these birds feeding over the east end of Bear Lake. Several were taken and all were adult breeding males.

Stellula calliope. Calliope Hummingbird. Two nests of this hummingbird were located on June 24 in a little canyon near the lake shore. One on a small branch about 45 feet up and almost inaccessible, but which I finally obtained, contained two heavily incubated eggs. The other nearer the trunk of a large pine and about 30 feet

up, held two fresh eggs. I succeeded in getting a photo of this nest (see fig. 47). Both nests were found by watching the birds. Both were small and rather poorly made, of weed fibres. This hummingbird was quite common, but further search for nests was unsuccessful as usually the birds would dart off into the top of the high pines and firs anywhere from seventy-five to over a hundred feet up, at which distances one could not follow them.

Sayornis nigricans. Black Phoebe. Seen several times on June 23 in a little canyon near Pine Knot Lodge, and again on the same date near the dam.

Empidonax wrighti. Wright Flycatcher. Wright Flycatchers were very common all through the western end of the valley, frequenting the buckthorn from the lake shore up into the little canyons and even up to the higher ridges. I failed to find any of these birds about the east end of Bear Lake or about Baldwin Lake. Many nests



Fig. 47. NEST OF CALLIOPE HUMMINGBIRD, THIRTY FEET ABOVE THE GROUND; NEAR BEAR LAKE, SAN BERNARDINO MOUNTAINS, JUNE 24, 1916

were located, nearly always in buckthorn from 2 to 3 feet up (see fig. 48). Two nests were found in manzanita and three in oak bushes. The sets were uniformly of four eggs. On June 22 nests with large young were found, and others with fresh eggs on the same date. Two nests just being built were discovered on June 29. Probably the later sets were caused by the first nests being destroyed. This seems to happen often, as several nests under observation were undoubtedly robbed by the chipmunks which infest all the brush in great numbers in this region.

Passerella iliaca stephensi. Stephens Fox Sparrow. Considerable time was spent in trying to locate a nest of this species, but without results except that I am almost certain it nests either on the ground or very low down under the thick brush. Nesting

must begin quite early as several families of full-fledged young were seen, and several taken, on June 20.

Vireosylva gilva swainsoni. Western Warbling Vireo. On June 24 I saw adults and fully fledged young of this species flying about in the willows near the I. S. Ranch store. I located a nest with large young in a small willow in a little canyon near Pine Knot Lodge on June 26, and another nest the same day in a large oak in the same locality, and upon which the bird was sitting. The latter nest was practically inaccessible being at the extreme end of a small branch 30 to 35 feet above the ground.

Myadestes townsendi. Townsend Solitaire. While walking along the road near Bluff Lake, June 20, a Solitaire flushed from a nest not over three feet away. The



Fig. 48. NEST OF WRIGHT FLYCATCHER, IN BUCKTHORN BUSH; NEAR BEAR LAKE, SAN BERNARDINO MOUNTAINS

nest (see fig. 49), a rather loosely made affair of pine needles, weed stems and leaves, contained a complete set of three fresh eggs. It was on a ledge under a bank about four feet up from the road. On June 26 I found a nest in a little canyon near Pine Knot Lodge at the base of a large pine tree. The nest was in a cavity that had formed by the rotting away of the base and side of the tree, and was placed directly on the ground. It contained two large young and one bird that had been recently killed. The head of the dead bird had been gouged out, and one of the live birds had a large scar on the top of its head. The nest was made of the same material as the one found near Bluff Lake but was more deeply cupped and closer woven. Both old birds were near the nest. The young were beautiful little fellows, and their buffy spotting made them very

hard to see even after I had located the nest. A family of full-fledged young were seen flying among the pines at Bluff Lake, June 29.

Hylocichla guttata sequoiensis. Sierra Hermit Thrush. These birds were not at all common in the locality covered, as they were met with only a few times. Once or



Fig. 49. NEST OF TOWNSEND SOLITAIRE, IN PLACE ON ROADSIDE BANK; NEAR BLUFF LAKE, SAN BERNARDINO MOUNTAINS, JUNE 20, 1916

twice I heard their song in the little canyons back from the lake, but they were very wary and I was unable to approach closely. I saw one of these thrushes on a little stream near Bluff Lake, June 29, but failed to locate a nest.

Claremont, California, August 1, 1916.

MEETING SPRING HALF WAY

By FLORENCE MERRIAM BAILEY

II. (*Continued from page 155*)

DRIVE DOWN across the southernmost prairies of Texas in April if you would meet the last of the migrating hordes of birds and see one of Nature's most remarkable exhibits of 'social plants'. Daisies that whiten occasional meadows in the east and the so-called poppies that gild strips of uncultivated land in California partially explain the term, but on the prairies most of the species are social plants and acres or miles of one species are followed by acres or miles of another species. Blue-bonnets dominated all the other flowers at Austin and were among the dominant flowers at Corpus Christi. Beyond them there was one flower bed about a mile wide and three miles long, solid *Coreopsis*, so brilliantly yellow it fairly mirrored the sun. That many of the social plants like *Coreopsis*, verbena, spiderwort, and phlox are the familiar garden flowers of the east makes their riotous growth seem peculiarly remarkable. Fresh from an eastern garden, even rods of verbena are enlarging to the mind!

The richest flora and fauna between Corpus Christi and Brownsville was found on the bands of clay soil adjoining the two towns and separated by a wide stretch of sandy soil. The most conspicuous flowers of the clay were yellow tar weed, yellow and pink prinrose, purple verbena, magenta *Callirhoe*, and yellow *Coreopsis*. Cactus, thorny chaparral, and mesquite also occurred on the clay soil, while on the sandy tracts here and there among the sand dunes stood live oak groves.

We began our three hundred and sixty mile drive from Corpus Christi to the Mexican boundary and return, on April 24, 1900, and that day made twenty-two miles to Petranilla Creek, enjoying the alternation of green mesquite orchards and gay flower prairie. One section of prairie had miles of pink evening primroses stretching as far as the eye could see. In the mesquite orchards the beautiful trees suggested the pepper trees of California with their finely cut waving foliage branched to the ground, and toward sunset the slanting light made the lacy foliage an intense yellow green. Though not yet decorated with their delicate tassellated yellow blooms, two trees that we saw bore brilliant blossoms—scarlet-breasted Vermilion Flycatchers! One of these was in a mesquite on the Oso, how musically the Spanish names run, the other in a tree at Mott Aura, Mott being the local name for a small grove on the open prairie (this one having a mixture of huisache, hackberry, and mesquite), Aura commemorating the Turkey Vultures which formerly frequented the grove. Having the unusual addition of a pond, Mott Aura had attracted not only the scarlet *Pyrocephalus*, green Vireos, and black Jackdaws, but also a Solitary Sandpiper and a number of Yellow-legs.

On the prairie the characteristic birds seen during our journey were Meadowlarks, Mourning Doves, Dickcissels, Sennett Thrashers, Nighthawks and Upland Plover. Knowing Dickcissels previously only as individual songsters well met on their breeding grounds in the wheat fields of the north, it was a pleasant surprise to meet the spring flocks on their way north. We began meeting them on our first day out. Long rows, rows sometimes reaching hundreds, were lined up on the fences like Swallows on telegraph wires. Their flat heads

and hanging tails marked them when too far away to see their chestnut backs or yellow chest patches. Their familiar song with its mouthed furry burr suggested the wheat fields of Illinois, for which some of them may have been bound. When not in exclusive rows of their own kind, the Dickeissels were often sitting alongside the large Mourning Doves, making the groups suggest old and young. A droll picture was seen one day, May 9, on our return trip, four Hummingbirds sitting on a fence, were darning needles against the big prairie.

On the fence posts or low bushes from our first day out we occasionally saw one of the large Hawks, *swainsoni* and *sennetti*, among the rare pleasures of our journey. *Swainsoni* was a familiar westerner but the southern *sennetti* was new to me. When opportunity afforded I noted eagerly its immaculate breast, white rump, and white tail with black subterminal band; but the impression of the bird is what is recalled to-day when a level prairie comes to mind. At a distance one sees a large statue of a Hawk on the prairie floor; on nearer approach, a King of Hawks looking up with calm enquiring gaze, both gaze and pose bespeaking the silent power of the race. The white of the Hawk, by Mr. Thayer's view of protective coloration, has been worked out to the undoing of its prey, the small mammals that look up at it against the light of the sky into which its whiteness enables it to fade; while on the other hand the small mammals have become colored like the prairie to protect them from furred and feathered hunters that look earthward.

Some Jack rabbits that we saw on our first day's drive trusted to their protective coloration as if they knew what Nature had done for them. While one ran off fleetly, its long black-marked ears held high, several crouched motionless, and one fairly skulked along, its ears flat on its back concealing the conspicuous black nape, as it ran with body close to the ground. One of the crouching ones trusted to its disguise, but with anxiety in its big eyes, while we drove near enough to have touched it with a whip. In another place a Jack was jumped up from the horses' feet and apparently half asleep broke all the rules of protective conduct, stopping only a few yards from us and sitting down on its haunches with ears up full length and black neck conspicuous, a rare exception to our common experiences.

Jack rabbits were the only animals seen on the open prairie but on the clay banks of Petranilla Creek when we made camp, tracks of coon, wild cat, and coyote, besides the excitingly strange tracks of armadillo—curious round, stumpy nail prints—suggested many stories of north and south. Big armadillo burrows were also found on our trip, slanting under cactus roots, and under tufts of marsh grass. How ardently I wished for a sight of the ancient armored beasts!

The rich band of vegetation bordering the creek demonstrated what water will do on the prairie. The flora showed the same northern and southern admixtures that made the fauna especially interesting. Elms and ashes stood side by side with hackberry, moss-hung live oaks, blooming cactus, palmettos that were all leaves, and the curious all-thorns that instead of leaves have green bark covering branches and thorns. Our camp floor encircled by these interesting trees and bushes was carpeted by pink primroses that, at nine in the morning, were still facing west where they had turned to follow the sun the night before.

Both migrant and resident birds enlivened the camp with their bright col-

ors and songs. An Indigo Bird back from its winter in Mexico or Central America, and our first Cuckoo, back from South America, were found here, and after listening to the voice of a Chat we caught sight of its brilliant yellow breast in the mesquite. A Wren, having probably wintered near home, was already beginning to build, being seen carrying a stick up through a streamer of moss. Hearing a bright pleasing song that resembled the Indigo Bunting's, I followed it up till, on a bare tree top in the sun I discovered—a Nonpareil, the familiar many colored cage bird! A Red-bellied Woodpecker came flying in to the bridge over the creek, but seeing us withdrew to watch us from around a corner. Besides these, there were Mockingbirds and a family of Harris Hawks, the handsome southerners. Their nest, a heavy platform of sticks in the top of a moss-draped hackberry, was littered with fur and bones, a dozen wood rat skulls among the number. The large well feathered nestlings had the same handsome rufous patches that distinguish the parents. The guardian of the nest, perhaps made unduly anxious by our presence, stood for a long time on the bare top of a tree that commanded the situation, and like a preoccupied philosopher ignored the hysterical attacks of a Mocker, doubtless another parent merely expressing his responsibility in terms of his own nervous temperament.

After Petranilla Creek, our next objective point was King's Ranch, fifty miles west of Corpus Christi, across broad stretches of flat blooming prairie, with successive bands of pink and white primroses. Where there were no fences the migrating Doves and white-winged Lark Buntings perched on the cactus pads, edging gingerly along as if fully mindful of the sharp spines. Once in passing we caught a delightful wave of song from the white wings. Fences were so rare that they were taken advantage of, and one corral that we passed was occupied by hundreds of Mourning Doves as close as beads on a string.

At San Fernando Creek a herd of range cattle reminded our Texas camp man that in a dry time thousands of cattle had been saved by having the spines burned off the cactus so that it could be fed to them. The old man warned us when looking for birds to 'watch out' for rattlesnakes, for he said in such hot weather the snakes stayed in the shade in the day time. As they were the large diamond backs of Texas and Florida whose long fangs put a dangerous amount of poison into the circulation, his warning had some point. At San Fernando Creek new flowers came in, a magenta Mexican poppy, a small mesquite with fragrant blossoms, and a bright red flowered cactus, followed later by blue-bonnets. The heat that made the cactus bloom also produced our first mirage. The spring migrants had need to hurry, but besides the white wings we noted a tardy Ovenbird, a Black-throated Green Warbler, and a Clay-colored Sparrow, on this, the twenty-fifth day of April.

Our second night's camp was on King's Ranch, one of the largest cattle ranches of Texas, where we met the Brownsville and Alice stage road and turned south across the rich stock range. The cattle king was at that time a cattle queen who spent her winters in New York, leaving her superintendent in charge. At his advice we camped at Santa Gertrude, as two windmills and their water tanks were called. A vivid green circle enclosed by mesquites branching to the ground with abundant water made indeed a camping place to commemorate a saint. Quail, a pair of Cardinals, and a pair of Thrashers carrying food showed their appreciation of the tanks, which were evidently well known in the region. As we had been warned regarding fellow travelers

near the Mexican border, when a party of dusky faced men rode in and proceeded to camp on the opposite side of our enclosure, I made sure that our fire-arms were fully in evidence and valorously determined to protect the camp from midnight Mexican daggers! Terrors of the night! The first Mexican to cross our camp ground, well after sunrise, was a mild mannered lad with a piece of drawn work to exchange for coffee and sugar for his breakfast! Nevertheless, on leaving the windmills we had to abandon the Alice and Brownsville stage road we had been enjoying, as, beyond that point, the stage drivers locked the gates behind them to prevent horse thieves crossing private pastures.

Another day passed in a world of flowers, a day of moving pictures, of beautiful and interesting forms of vegetation and bird life. More circles of pink evening primroses were surrounded by green mesquites, and a grove of low huisache more filmy and delicate even than the mesquite, was carpeted with *Coreopsis* as yellow as buttercups. Then, in striking contrast, came a thicket of thorn brush with cactus coming into bloom, and beyond a carpet of the curious Indian wheat, a whitish plantain that grows extensively in the arid region, and whose miniature grain the pocket mice carry home in their pouches. Big bare circles around peaked ant hills with bare trails leading to them through the vegetation were characteristic and numerous.

At a turn of the road there appeared a lake set in a cool dark green tule frame. A gleaming white spot on its edge, through the glass proved a red-breasted Shoveller, and on a tongue of the lake stood a Solitary Sandpiper and a Plover with her young, while a Greater Yellow-legs, followed by its miniature a Lesser Yellow-legs, walked along the shore, mirrored in the water. One shallow strip of pond that we passed was covered with little shore birds running about and scolding at each other in double.

After passing acres of white mint we came to one solitary scarlet painted-cup, so gratefully brilliant after the white that its single flower caught the eye and held it charmed. Beyond, the pink *Erythraea* began increasing and swelled in numbers till it reached its height. Following the *Erythraea* came an unusual field of blended colors. In the vivid green grass was a stand of pink phlox and a level higher, thinly but uniformly scattered through it, a stand of some bright yellow flower. While the color combination seems crude and in-harmonious, curiously enough the effect of the yellow was merely to lighten the pink, to illuminate the field in a rare and surprising manner. After this, as if Nature would do nothing to weaken such an effect, there followed miles of white daisies.

Before sundown we passed our next landmark, Santa Rosa Ranch—the names marking the road between Corpus Christi and Brownsville are those of ranches, windmills, or motts—and after driving up to the hubs through freshet lakes we camped for the night between two runs, much to the dissatisfaction of the old Texas camp man who said that he had been caught that way in winter, camping beside a dry wash and having to stand up to his knees in water half the night! The only excitements of the night, however, proved to be the passing of birds in the darkness, the fine chip of small migrants, the squawk of Black-crowned Night Herons, and low over us the thrilling swishing of heavy wings, probably those of Wild Turkeys. As the night had been dry, Mr. Bailey found pocket mice and kangaroo rats in his traps, for we had now entered the sand belt that supplies homes for these small burrowing animals

and the badgers that prey on them, all of which are unknown in the clay belts adjoining Corpus Christi and Brownsville.

After visiting the traps we went in search of the birds that were holding jubilee on the other side of the woods, and in spite of the warning of the old Texan, "Look out, there's varmints in that bresh," pushed through the dense cactus and thorn armored thicket, bending low to escape the thorny branches or shoving rigidly through with minds hardened to the pricks of needles, though with eyes out for coiled rattlesnakes. After a strenuous passage we reached the edge of a lake of flood water, in the middle of which mesquite trees stood up to their heads, black-spotted with Jackdaws, squawking and squealing almost loud enough to drown even the cackling of Coots and barking of Grebes that were adding to the merry medley on that April morning.

In one corner of the pond a small flock of Cormorants perched on the mesquites, their long snaky necks and bills raised expectantly. When they descended to the water they looked droller than ever, for they still sat with long bills pointed skyward. A party of gray, white-billed Coots feeding quietly in a dark green tule cove or standing on the beach as if at home, and scattered groups of Coots swimming about in leisurely homelike fashion offered amusing contrasts to the strained alert manner of the Cormorants. Some Eared Grebes with light ear patches were swimming about as complacently as were the Dabchicks, between dives, though their spring journey was not yet completed. Through the bushes we caught sight of two Gallinules disappearing so fast we merely saw their small hen-like heads and bright red bills in passing.

Along shore the sand was filled with holes and pellet-made chimneys of fiddler crabs, and I spied one little fellow with its arms around a victim backing down its hole. Coon tracks on the sand told the other side of the crab story.

Taking up our journey again our prairie road disappeared in another flood pond, in which we went up to the hubs. Beyond, on the dry prairie we drove through bands of color, miles of low pink phlox and pink primroses, yellow *Coreopsis*, *Senecio*, or *Oenothera*, orange brown *Thelesperma*, scarlet painted-cup and white daisies. During the day we noted the Blue Grosbeak, Red-winged Blackbird, and Maryland Yellow-throat. In an oak mott that we crossed there was an interesting old stage station, a Mexican pole house with thatched roof, its pole walls chinked with mud, a brush corral adding to the foreign picture.

Under the oaks of the mott we found three fellow travelers, an old Mexican with a pointed hat, a boy with a three-story water jug in his hand, and a solemn little burro with a peccary skin spread on his back. Our mules shied at the group but we stopped to talk to the wayfarers and persuaded them to sell us the handsome white-collared peccary skin. Where it had been secured, our Spanish was inadequate to discover, but a few of the wary wild pigs are still left in the region though they escape the hunter by taking to caves and cactus and thorn brush. If a mounted cowboy ropes one, he does it with great risk to his horse, for the pigs when brought to bay gash the horse's legs with their sharp tusks.

After leaving the mott, instead of prairies glowing with flowers, we had equally beautiful green salt marshes alive with light that glinted from the stems of the marsh grass. The green level stretching away to the horizon was dotted with ponds, some bordered with tules, some merely flood water ponds

with submerged tufts of marsh grass, but all covered with water fowl, some of which were resting and feeding on their way from Argentina to Alaska. Among those seen were the Solitary, the Western, and Buff-breasted Sandpipers, Dowitchers, Black-necked Stilts, Killdeer, Greater and Lesser Yellowlegs, feeding in flocks together, besides quakerish Willets, and comfortable looking Shovellers. How interesting to meet the travelers half way!

But while our morning, with its lakes full of water fowl, was the most exciting of our journey, our afternoon dragged slowly along for we had reached the sixty or eighty mile stretch of light sand that in distinction from the hard bottomed sand of the mesquite land makes such hard pulling that we had been warned about it before starting. Coarse poor grass and low oak brush replaced the flowers we had come to consider our portion, and sand dunes were the most interesting landscape features. The country was as bare of bird as plant life with two notable exceptions. Upland Plover were passed along the road so tame that they walked close to us with gentle fearlessness, their heads raised, their mild eyes resting upon us; and farther on we saw a flock of perhaps a hundred Long-billed Curlew flying toward the ocean in a long shifting line, now a broad V, now a saw-tooth W, now a straight line, a stirring sight. When the birds had gone, the hours dragged out and we helped them pass as best we could analyzing stray flowers, collecting an occasional specimen, or photographing some new type of vegetation, studying up constellations for our nights in the open, and dipping into the miniature pocket poets I had brought for such hours of need. After Wordsworth we were well attuned to the quiet prairie sunset, a warm, serene sunset, the round pink ball going down on the level horizon broadening the outlook till we found ourselves quoting Lanier's *Marshes of Glynn* with their range and their sweep.

At last the low line of trees we had been wearily traveling toward for hours was reached and proved a veritable oasis in the sand belt. An oak mott, San Ignatia by name, raised only a few feet above the general level but made up of large old live oaks that dispensed cool shade through the hot hours and offered shelter to birds from all the region round about. The trees, filled with nests, were noisy with squawking Jackdaws, clamoring Scissor-tails, and loquacious Mockingbirds, the heated medley being cooled down by the quiet cooing of Doves. When the aviary had settled down for the night a rattlesnake, discovered too near our tent, had to be shot, and at the report of the gun an amazingly large flock of Scissor-tails burst out of the tree, proving what the oak mott meant on the treeless prairie. The oaks had been trimmed up for wood by previous travelers, but after making camp it did not take the old Texan long to discover some dead branches he could lasso, and we were soon sitting before the camp fire enjoying our supper after our long day's drive.

The stars came out so temptingly that we carried our sleeping bags out under them on the open prairie. To sleep under the stars on the open, level prairie—the dream of years was to be realized at last! As if from a raft on the ocean the entire circle of your horizon is star-filled sky! As night closes in around you, you seem to be alone with the stars. Mortal no longer, you become a point in the universe. All human cares, all the littleness of human life drop from you, the great universe lies close around you.

But one cannot always stay on the illuminated, soul expanding mountain tops. The return to earth in this case did not bring the looked for second rattlesnake, but a scorpion fell from a shaken sleeve the next morning. The day

was spent in trapping, skinning, and writing up notes among the bird colony of the oak mott. Its rarest member, *Pyrocephalus*, the exquisite little scarlet-breasted Flycatcher sang a rapturous flight song suggestive of that of the Cassin Sparrow. When in midair he would puff out the feathers of his breast till he might have been a full blown red rose, and then float down through the air to the flowery fields below. The Jackdaws, prominent members of the mott colony, amused us by their buffoonry, their attitudinizing, their eraekling, brush-breaking noises and their falsetto squeals while their mates calmly gathered nesting material. Golden-fronted and Texas Woodpeckers called as they passed back and forth through the trees, the Golden-fronted with a loud penetrating rattle. Vireos hunted about, and passing Warblers, among them the Black and White Creeper, chipped in the tree tops. A belated Chestnut-sided was seen in another oak mott later in the day. A Mockingbird was building in an oak and we found a Lark Sparrow's nest sunk in the ground at the foot of a bush containing four eggs. On the live oaks were found clumps of a stout air plant related to the Spanish moss with beautiful purple fuchsia-like flowers that proved to be a new species, and it was carefully photographed, as was also a solid acre of pink phlox, though, alas, we could not reproduce the colors!

When we again took to the road and Barn Swallows with their dark backs and deep chestnut breasts circled around us, by contrast we realized anew how keen and bright were the tones of the prairie flowers. As we drove on a Caracara with its proud, erect bearing, waited in a low tree ahead of us till we could distinguish its black crest, and as it flew off its white wing tips were conspicuous. A partly eaten snake and the Mexican emblem seemed well correlated. Very few birds were seen along the road on these last days of April, and those mostly summer residents, a few Mourning Doves and Horned Larks, a flock of Cowbirds around a herd of cattle, and once a Nighthawk sitting with furled sails on a 'chip' on the prairie. Resident bird life centered in the motts, where Wood Pewees, Lark Sparrows, Quail, Clay-colored Sparrows, Blue Grosbeaks, Curve-billed Thrashers, and Mockingbirds were seen, a Mocker in one place feeding half grown young. Mockingbirds were so abundant that the old Texan remarked comprehensively, "Wherever you find a bush you'll find a Mocker, without an accident, from Corpus here."

The largest mott, which was seen on the twenty-ninth, offered such generous shade that cattle had bared the ground under its oak roof. Jackdaws were making a great commotion here and Orioles and Black and White Creepers increased our wish that we might camp and investigate.

A north wind gave us a beautiful sight, a flock of perhaps forty White Pelicans maneuvering in the sky, flying in a wedge or a straight line, for, as we were told, a north wind makes them fly north because it piles the water so high down the gulf that they cannot get their fish. The events of the hour were a number of large Hawks, the Harris, Sennett, and Swainson, some of them perching on telegraph poles, as if appreciating the rare possibility, beautiful, smooth sand dunes, and our old friends the mesquite and cactus, together with ponds enlivened by Redwings and waders, and encircled by brilliant yellow *Coreopsis* rings. These yellow rings around pools were so numerous that they demonstrated the aquatic taste of the flowers.

Sauz Ranch, the next spot on the map, proved not only a white man's ranch and stage station but a Mexican village of picturesque hachells made of branches and thatched with grass, inhabited by Mexicans who rode around

with tall peaked hats. In passing a goat pen we persuaded the white-bearded goatherd to take a dime for a cup of goat's milk though he urged that it was worth only *un centavo*. A jolly party of Mexicans traveling in a prairie schooner camped by our water tanks.

Here we saw our first tropical and sub-tropical White-winged Dove, a bird which afterwards grew rapidly common. In hooting it sat on a branch and puffed out its throat emitting its curious hollow, cavernous *whoo-hoo'-hoo-hoo'*. A nest that we discovered was in a huisache over flood water about six feet from the ground.

Beyond Sauz Ranch a new effect was given to the woods by the butterfly tree (*Parkinsonia aculeata*). It had been only in bud at Petranilla Creek a week before, but we were going south and it was here in full bloom, its jessamine-like yellow flowers having a delicate fragrance. A *Salvia* also added a bright touch to the woods, and outside the magenta poppies increased in numbers.

(*To be continued*)

A HOSPITAL FOR WILD BIRDS

By DR. W. W. ARNOLD

WITH TWO PHOTOS BY THE AUTHOR

ONE OF the most delightful sequelae to my efforts to interest school children in bird-life and its protection, was the establishment of a hospital for the care and treatment of wild birds suffering from what might be termed the normal catastrophes which happen to vast numbers of our feathered brothers as they journey from their embryonic egg-shell home to the grave. For a number of years I had been devoting much time and attention to arousing general interest in the welfare and protection of bird-life, through talks on birds, illustrated by lantern slides and mounted specimens; but it seemed impossible to arouse a permanent interest and abiding enthusiasm in the children until I adopted the plan of taking the live birds that had been restored from some accident, and showing them to the children, at the same time reciting the life-histories of the feathered patients, the character of their injuries, and the method of treatment carried out for their relief. This plan met with an immediate response, and the children deluged me with such numbers of crippled birds that I was compelled to erect a commodious aviary (fig. 50), and to call into use a large number of small cages for the accommodation of the seriously injured.

Within twelve months the size of the hospital had to be doubled to accommodate the feathered patients; and following the heavy hail storm occurring July 18, 1915, I was completely swamped and had to resort to all kinds of devices to furnish shelter for the flocks of battered and broken creatures brought to me by the children. Forty-five robins suffering from broken wings, broken legs, eyes knocked out, and bodies battered and bruised, refrigerated by ten or twelve hours spent in windrows of hail stones, were brought to the hospital for treatment; and fifteen miscellaneous victims—bluebirds, finches, black-headed grosbeaks, yellow warblers, red-shafted flickers, meadowlarks, tana-

gers, orioles, doves, sparrows and two Calliope hummingbirds rounded out the grist of this dreadful bombardment of icy bullets. The fatality in this group of patients was very heavy, due to exposure to the ice-water bath they were subjected to for so many hours, which seemed to have developed pneumonic conditions.

A more pitiful sight than those forty-five injured robins, with their bound-up broken wings and legs, could hardly be imagined, and what touched my heart most deeply was the immediate response they manifested to my efforts for the relief of their sufferings. Within thirty-six hours they had lost all fear of my presence, and when I would approach the hospital and call to them, "Hello birdies, do you want your dinner?", every head would go up, and a joyous note in answer greet me. Then, as I opened the door to pass in the cherries, earth-worms and boiled bread and milk, they would rush pell-mell upon the waiter and begin devouring the meal in voracious manner. Their jousts at feeding time were highly amusing and revealed robin nature as I had never seen it before. The tug-of-war which ensued when two birds grabbed opposite ends of the same angle-worm, was the occasion of hearty merriment.

A souvenir of this hail storm was brought to me but recently. It is a mother Yellow Warbler covering her nest with out-stretched wings, a record of vain endeavor to save the lives of her infant babies. Her life was blotted out instantly by the impact of an icy bullet on her head, and there in this attitude of loyal devotion to her home, she found her sepulchre, the dry atmosphere absorbing the liquids of the body and mummifying it.

A fledgling robin suffering from a fracture of the right wing proved to be one of the most interesting of all my feathered patients. He was dwarfish not only in body but in mind, also possessing an irascible temper which was constantly in a state of explosion. He was so restless and fidgety, and dashed about so recklessly, that he kept his plumage in a dreadful state of dilapidation, and his wing feathers were so frazzled he could not fly, and his tail was

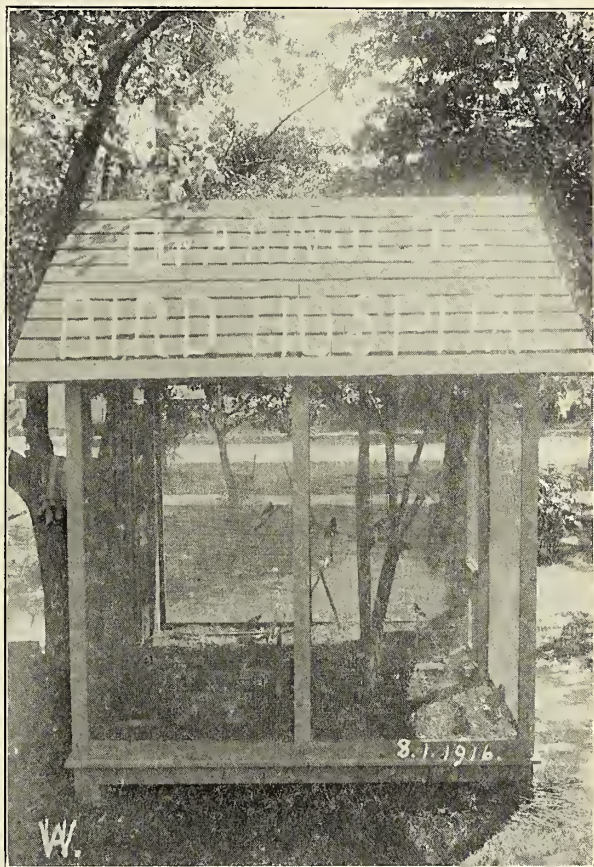


Fig. 50. A HOSPITAL FOR CRIPPLED BIRDS MAINTAINED BY DR. W. W. ARNOLD, IN COLORADO SPRINGS, COLORADO

so demoralized and abbreviated that he was naturally nicknamed "Bobby". Feeding time was the opportune occasion for displaying the foolishness of his temper. As long as he was sole guest at the festal dish, and was shoveling into his stomach mouthfuls of food with a voracity suggestive that one minute was the limit of his life tenure, all was well; but the instant his companion, the Western Meadowlark, attempted to partake of the boiled bread and milk and scraped beef, Bobby was instantly transformed into a veritable fury, and would fly upon the lark, peck, scratch and kick it, using his legs just the same as a rooster, until the poor, timid creature would creep away into the farthest corner of the cage and wait until Bobby had stuffed himself into a



Fig. 51. A CRIPPLED AMERICAN BITTERN; STUMP OF UPPER MANDIBLE HEALING AFTER SHOT WOUND

condition of stupid indifference. Bobby was one of the most forceful of all of my "golden texts": I call the recovered feathered patients, which I display to the children, giving the life history of each bird, "golden texts". Bobby's horrid table manners and exhibition of temper furnished endless suggestions for my sermonettes. He finally died from the effect of a prolonged bath which he insisted on taking one cold evening in early May.

From a scientific point of view an American Bittern which I had under treatment for several months yielded the greatest satisfaction and interest. While passing across the State to his breeding grounds, he was attracted by the inviting scenery and restful appearance of the land lying at the foot of Pikes Peak, and concluded to stop over for a few days recreation. Scarcely

had he commenced to investigate the chances for a dinner along the shores of one of our numerous reservoirs, before "a boy and gun" appeared upon the scene, and the next instant the poor creature was tumbling about with a disabled wing, while the upper mandible was shot in two about midway, held from separation merely by the soft tissues. As a matter of experiment the fractured mandible was adjusted and properly held in place by splints, but within a week's time nature had amputated the dead point. Then curiosity to discover what effort nature would make to repair the broken member induced me to continue to care for the bird (see fig. 51).

As it was impossible for the poor creature to feed himself it became incumbent upon me to assume the functions of foster father, and I soon discovered I had a big contract upon my hands, for the mutilated mandibles had to be pried apart and the food thrust down his remarkably capacious gullet several times daily. Not once was this process performed without vigorous protest on his part, and the sounding forth of his bellowing notes. His mimicry was fascinating and ever a source of interest and amusement, especially when he realized that he was not fooling you and would descend from his statuesque attitude, and suddenly, by a trick of feather adjustment, assume three times his normal proportions, uttering a roar of disgust and resentment. Nature made a feeble effort to reproduce the destroyed horny material of the bill, the result being a thin nail-like projection a little over half an inch long. After several months the bittern's appetite began to fail and he died of inanition.

Quite a large number of feathered patients, consisting of house sparrows, finches, horned larks and western meadowlarks, were recorded in the hospital during the early summer months as victims of the screw-fly maggot, a marked increase being noted the present summer. This fly has a deadly method in the deposit of its eggs, which are hatched in the process of insertion into the flesh of its victim, regions being selected largely inaccessible to the beak of the bird. The inner corner of the eye, the top of the head, the neck, and the under sides of the wings seem to be the favorite locations selected by the fly, although some of the victims were simply dotted all over with the worms. I never observed any of the worm-infested birds making efforts to remove the maggots, or giving evidence that they were suffering from local irritation or discomfort, but all seemed to be stupid and drowsy as though under the influence of septic poisoning.

Two fledgling western meadowlarks found wandering quite a distance from their nest, were found to be literally alive with the horrid maggots, one yielding twenty-six and the other twenty-four specimens. Very few of these fly-stung birds recovered, even when relieved of their deadly messmates, septic conditions prevailing to a fatal extent. To me the remarkable thing about this maggot is that it immediately abandons its victim as soon as death ensues. Human beings are infested as well as birds and mammals. A child a few months old while being wheeled in its carriage through one of our parks cried out suddenly as if in pain, and the mother noticed a screw-fly dashing against the face of the infant. By the time the mother reached my office with the child I found half a dozen of these microscopic maggots burrowed half their length in the skin of the baby's face.

My bird hospital has furnished me with an endless number of incidents and anecdotes of bird life which I treasure up for the enjoyment and edification of the school children, who, many thousand in numbers, have become my faithful and loyal coadjutors in the care and protection of bird-life. And through this glorious service for our feathered brothers, the birds, I have garnered the sweetest joys of life, and prolonged my years beyond man's allotted time.

Colorado Springs, Colorado, August 7, 1916.

SOME BIRDS OF THE FRESNO DISTRICT, CALIFORNIA

SUPPLEMENTARY NOTES

By JOHN G. TYLER

IN *Pacific Coast Avifauna No. 9*, one hundred and sixty-one species and sub-species of birds were listed as occurring within the region under consideration. Recent field work has enabled me to identify a number of others and I have also had the pleasure of examining a small collection of skins belonging to Mr. H. C. Ohl, from which I obtained several interesting records.

Occasional mention was made in *Avifauna No. 9* of the New Hope District, a schoolhouse of that name furnishing the only means of locating a rather sparsely settled portion of Fresno County. A railroad has since been constructed and the embryonic city of Helm, with its postoffice of the same name, has arisen to dispossess the school of the honor of being the only nameable object in a vast area of interesting country. The seventh line on page 15 in my former paper should read "Herminghaus" instead of "Chowchilla" Ranch, the latter being an inexcusable error on my part.

The thirty-three birds listed herewith brings the total for the Fresno District up to one hundred and ninety-four.

162. EARED GREBE. *Colymbus nigricollis californicus* (Heermann).
163. RING-BILLED GULL. *Larus delawarensis* Ord.
164. CASPIAN TERN. *Sterna caspia* Pallas.
165. COMMON TERN. *Sterna hirundo* Linnaeus.
166. AMERICAN MERGANSER. *Mergus americanus* Cassin.
167. GADWALL. *Chaulelasmus streperus* (Linnaeus).
168. CANVAS-BACK. *Marila valisineria* (Wilson).
169. GREATER SCAUP DUCK. *Marila marila* (Linnaeus).
170. LESSER SCAUP DUCK. *Marila affinis* (Eyton).
171. BUFFLE-HEAD. *Charitonetta albeola* (Linnaeus).
172. ROSS SNOW GOOSE. *Chen rossi* (Cassin).
173. CACKLING GOOSE. *Branta canadensis minima* Ridgway.
174. AMERICAN EGRET. *Herodias egretta* (Gmelin).
175. SNOWY EGRET. *Egretta candidissima candidissima* (Gmelin).
176. SORA. *Porzana carolina* (Linnaeus).
177. WILSON PHALAROPE. *Steganopus tricolor* Vieillot.
178. LONG-BILLED DOWITCHER. *Macrorhamphus griseus scolopaceus* (Say).
179. WESTERN SANDPIPER. *Ereunetes mauri* Cabanis.
180. SPOTTED SANDPIPER. *Actitis macularia* (Linnaeus).
181. SEMIPALMATED PLOVER. *Aegialitis semipalmata* (Bonaparte).
182. SNOWY PLOVER. *Aegialitis nivosa* Cassin.
183. RED-BELLIED HAWK. *Buteo lineatus elegans* Cassin.
184. RICHARDSON PIGEON HAWK. *Falco columbarius richardsoni* Ridgway.
185. OSPREY. *Pandion haliaetus carolinensis* (Gmelin).
186. DUSKY POOR-WILL. *Phalaenoptilus nuttalli californicus* Ridgway.
187. TRAILL FLYCATCHER. *Empidonax trailli trailli* (Audubon).
188. ARIZONA HOODED ORIOLE. *Icterus cucullatus nelsoni* Ridgway.
189. CALIFORNIA PURPLE FINCH. *Carpodacus purpureus californicus* Baird.
190. MODOC SONG SPARROW. *Melospiza melodia fisherella* Oberholser.
191. GREEN-TAILED TOWHEE. *Oreospiza chlorura* (Audubon).
192. WESTERN WARBLING VIREO. *Vireosylva gilva swainsoni* (Baird).
193. SAGE THRASHER. *Oreoscoptes montanus* (Townsend).
194. DOTTED CANYON WREN. *Catherpes mexicanus punctulatus* Ridgway.

GENERAL ACCOUNTS OF THE BIRDS

Colymbus nigricollis californicus (Heermann). Eared Grebe. May 23, 1915, Mr. J. E. Law and I saw one pair of Eared Grebes and a single individual on a large, shallow pond near Riverdale. The pair seemed much interested in the largest of several clumps of tules and we watched them for some time through Mr. Law's high power glasses. June 19 I returned to the pond and finally located a nest in an opening among the tules. It was floating in water three and one-half feet in depth, and a portion of one of the carelessly covered eggs was visible from the opposite side of the opening about fifteen feet away. The nest was a slovenly arranged mass of dead tule stems and in no way resembled the well-made, compact nests of Pied-billed Grebes. There were four eggs, all somewhat incubated and very much stained. Only one bird was present and it remained near-by while I was inspecting the nest.

Larus delawarensis Ord. Ring-billed Gull. This gull has been reported several times from different parts of the valley, usually as single birds occurring during migrations. Mr. W. Moore of Selma has a mounted specimen taken several years ago on a small pond near that place. I was unable to learn the date of capture.

Sterna caspia Pallas. Caspian Tern. These large handsome terns occur quite commonly as spring and fall migrants through the district. They seem to enter the county near the Summit Lake region, follow down the Fresno Slough to its confluence with the San Joaquin River and then northward along that stream. I have never observed them elsewhere, except as an occasional bird may wander for a short distance out over the adjacent overflowed territory. Small companies are usually the rule in the spring, but after the nesting season single birds are as often seen. April 3, 1914, one individual was observed at the dam near Mendota and on the 18th of the same month another was noted flying back and forth over the west end of Summit Lake. May 6, 1914, a flock of nine was seen flying down the river near the drawbridge at Firebaugh. August 14, 1914, fully a dozen of these red-billed terns were observed flying over the slough at White's Bridge. They were not associated in a flock, but each individual seemed to fish over a well defined, semicircular course about one-half mile in length. They kept some distance apart and occasionally gave voice to a grating noise. All were in post-breeding plumage, with the black caps streaked with white. One specimen was taken, an adult female. I passed the same place on August 24 and September 1 and noted *Sterna caspia* on each occasion; but a few days later none were seen. So late as October 2, 1915, Mr. F. Seymour Hersey found Caspian Terns still in evidence and collected specimens on the Madera County side of the river near Mendota. Both adults and immatures were present.

Sterna hirundo Linnaeus. Common Tern. Mr. F. Seymour Hersey collected a specimen of this species on October 2, 1915, near Mendota, but on the Madera County side of the river. The bird was an immature female and, so far as I am aware, this is the only recorded instance of the occurrence of this tern anywhere in the interior of the State. Another bird taken at the same place proved to be the common *Sterna forsteri*.

Mergus americanus Cassin. American Merganser. My collection contains a beautiful male of this species, taken near Firebaugh January 20, 1915.

Chaulelasmus streperus (Linnaeus). Gadwall. The Gray Duck occurs sparingly as a winter visitant but seems to be decreasing from year to year. Possibly it formerly bred in suitable places, but if it does so at the present time it is in limited numbers. There was a mounted specimen in the office of A. D. Ferguson of Fresno. This bird was shot near Helm during the winter of 1912.

Marila valisineria (Wilson). Canvas-back. The winter of 1913-14 brought large numbers of Canvas-backs into the San Joaquin Valley. They arrived early in November and were common until February, and possibly later. On November 29, 1913, a party of hunters reported fully two hundred and fifty "cans" on the Artesian Lake near Helm, and brought me an adult male which is now in my collection together with another male from near Firebaugh, taken January 20, 1914. Personally I never saw but one female, and several hunters told me that very few females were ever encountered.

Marila marila (Linnaeus). Greater Scaup Duck. Mr. Ohl's collection contains a male of this species from the Herminghaus Ranch near Mendota. The label bears the date of April 2, 1912. According to *Pacific Coast Avifauna* No. 11 there is only one other known instance of the occurrence of this duck anywhere in the interior of the State.

Marila affinis (Eyton). Lesser Scaup Duck. The Lesser Scaup occurs rather uncommonly as a winter visitant, usually being encountered as single birds either alone or in flocks of other species. Mr. S. L. N. Ellis reports shooting one on October 15, 1913, on the Herminghaus Ranch at Mendota.

Charitonetta albeola (Linnaeus). Buffle-head. I have seen a few mounted winter specimens of this handsome little duck, but it does not occur commonly anywhere in the Fresno District. The favorite resorts are the large open ponds, similar to those chosen by the Ruddy Duck, rather than the narrow sloughs and the tule ponds.

Chen rossi (Cassin). Ross Snow Goose. This little snow goose, known to hunters as "squealer", is a rather common winter visitant to the open country along the west side of the county. It occurs regularly in the region about Firebaugh, but is exceedingly wary and difficult to approach. Several large flocks were observed near Oxalis, January 26, 1916. Their habits seem to differ considerably from those of the Lesser Snow Goose.

Branta canadensis minima Ridgway. Cackling Goose. A specimen of this goose in my collection was taken near White's Bridge, January 11, 1915. This species, in common with several other geese, is a regular winter visitant to the open country in the western part of the district. In the markets these little geese are often referred to as "young honkers", but the market hunters call them "Brant" or "Black Brant".

Herodias egretta (Gmelin). American Egret. A noticeable increase in the egret population of this part of the San Joaquin Valley during the past few years would seem to indicate that this handsome species will be able to hold its own against everything save the encroachments of agriculture. There is probably a small breeding colony somewhere in the Laton or Summit Lake region in addition to the one recorded by H. C. Bryant in Stanislaus County. December 8, 1914, Mr. S. L. N. Ellis noted thirteen egrets near Riverdale. On the 18th of the same month I saw six near the same place, and a young man informed me that twelve had been seen flying over the barn on his father's ranch earlier in the day. Hundreds of Night Herons and a great many *Ardea herodias hyperonca* were attracted to the same locality. Throughout the summer, egrets may be confidently looked for on the extensive fields of the Herminghaus Ranch near Mendota. April 3, 1914, I saw three, and exactly a month later one was approached in an auto to within seventy-five yards before it took wing. May 26, 1915, Dr. A. K. Fisher and the writer counted seven egrets standing in the over-flowed areas of the field. The birds are always exceedingly wary and a man on foot can seldom hope to get nearer than three or four hundred yards; yet when flying from their roosting places to their feeding grounds egrets fly very low and frequently pass directly over houses or roads.

Egretta candidissima candidissima (Gmelin). Snowy Egret. Reports from several reliable observers agree that the Snowy Heron was a common species throughout suitable areas in Fresno County before the inroads of agriculture had transformed so much of the swamp lands into grain and alfalfa fields. They still occur, but in very limited numbers, as summer visitants to the region near the confluence of the Fresno Slough and the San Joaquin River and in the Firebaugh district. Unlike the larger species this egret has shown no noticeable increase of late and seems to be gradually disappearing. During the years of their abundance, this species often assembled, after the breeding season, in flocks of thirty or more individuals.

Porzana carolina (Linnaeus). Sora. I have a number of fall, winter, and spring records of this rail but have never detected it in mid-summer, although it possibly breeds not uncommonly. The numerous telephone and power wires annually prove destructive to a great number of rails, coots, gallinules and other night-flying migrants. Mr. H. C. Ohl has a specimen of the Sora picked up from beneath the wires near White's Bridge on September 12, 1912, and I found another victim near McMullen on April 17, 1914. December 3, 1912, I noted a Sora in the slough near Centerville, and December 25, 1914, two were seen feeding, late in the afternoon, at a tule pond eight miles southwest of Fresno.

Steganopus tricolor Vieillot. Wilson Phalarope. While driving along the road about fifteen miles east of Firebaugh, in Madera County, May 24, 1915, Mr. J. E. Law and I discovered a pair of Wilson Phalaropes near a series of shallow alkaline overflow ponds. One of these birds was a male in breeding condition and plumage. Other evidence, too, seemed to warrant the conclusion that this pair might have been nesting nearby.

Macrorhamphus griseus scolopaceus (Say). Long-billed Dowitcher. This interesting wader occurs as a spring and fall migrant, but from my observations it is not very abundant at any time. October 18, 1912, two were noted at a small pond near Easton, and August 6, 1914, a single bird was seen near Fresno. This latter individual seemed to have already molted the brilliant cinnamon breeding plumage notwithstanding the early fall date. A specimen which Mr. Ohl examined on May 3, 1913, was in very rich plumage and the stomach contained three angle-worms and two cut-worms.

Ereunetes mauri Cabanis. Western Sandpiper. This sandpiper is an abundant spring and fall migrant, and winters sparingly, being greatly outnumbered at this season, however, by the somewhat similar *Pisobia minutilla*. During the spring many flocks of the latter contain scattering individuals of this species. Migrant Western Sandpipers were still present in large numbers at many of the ponds as late as May 6, 1914, and by July 5, 1915, a small returning flock had appeared in the White's Bridge region. On August 12, 1914, this species was rather common along the Madera road east of Firebaugh, and October 15, 1915, they fairly swarmed about several large ponds near Riverdale. Around some of the stagnant alkaline ponds south of Caruthers I have noted a very heavy mortality among the flocks of spring migrants.

Actitis macularia (Linnaeus). Spotted Sandpiper. April 4, 1914, Mr. S. L. N. Ellis called my attention to a small wader that had been noted daily during the preceding three weeks or more, on the boom-logs at the Mendota dam. The bird proved to be a Spotted Sandpiper in the unspotted winter plumage. It fed along the logs, balancing and teetering in characteristic fashion, and seemed not the least disconcerted by the very near presence of numerous fishermen.

Aegialitis semipalmata (Bonaparte). Semipalmated Plover. I have an adult male of this species, collected April 21, 1914, at a small pond near Riverdale. It was feeding in the mud several feet from the water's edge. Near-by were several avocets, stilts and killdeer. October 15, 1915, the dried-up remains of another Semipalmated Plover were discovered on the shore of a large pond not over a mile from where the one mentioned above was taken.

Aegialitis nivosa Cassin. Snowy Plover. A rare visitant to the larger open bodies of water. Mr. J. E. Law and I discovered a pair near the shallow overflow along the Madera road, east of Firebaugh, May 24, 1915. All indications pointed to the probability that this pair was preparing to nest.

Buteo lineatus elegans Cassin. Red-bellied Hawk. This handsome hawk has never been detected anywhere in this region in the numbers that one might reasonably expect. It occurs sparingly in the Kings River bottoms near Sanger, where I saw a beautiful example on January 9, 1913. I have no breeding records.

Falco columbarius richardsoni Ridgway. Richardson Pigeon Hawk. I recorded *Falco columbarius columbarius* in *Pacific Coast Avifauna* No. 9, page 46, the records being based on several birds seen but not collected. October 2, 1915, Mr. F. Seymour Hersey collected a specimen of *richardsoni* on the Madera County side of the river, near Mendota. It was a female in good plumage and I was very grateful to Mr. Hersey for supplying a new species for my list, even though by so doing he put me to the necessity of collecting further specimens to determine whether or not *Falco columbarius columbarius* occurs at all. This record and that of *Sterna hirundo* are made through the kindness of Mr. A. C. Bent.

Pandion haliaetus carolinensis (Gmelin). Osprey. The Fish Hawk was quite frequently noted, in former years, along the Kings and San Joaquin rivers according to several reliable observers, but has now become very rare. I saw one on the San Joaquin River near Herndon March 31, 1914, and was so fortunate as to see him plunge into the river from a considerable height.

Phalaenoptilus nuttalli californicus Ridgway. Dusky Poor-will. Mr. H. C. Ohl has a specimen of this bird taken March 27, 1912, at Mendota, and I have one from Piedra, collected March 5, 1915.

Empidonax trailli trailli (Audubon). Traill Flycatcher. A spring and summer visitant, being encountered occasionally in the willows along certain sloughs. I have never found a nest, but on May 23, 1915, Mr. J. E. Law heard one of these flycatchers singing in the willows surrounding a small deep-water pond, north of Riverdale. The date would seem to indicate the possibility that this bird was preparing to nest, and the surroundings were most favorable.

Icterus cucullatus nelsoni Ridgway. Arizona Hooded Oriole. Miss Winifred Wear was the first to record this species from the Fresno District (see CONDOR, xvii, p. 234). On June 27, 1915, I personally saw a pair of Arizona Hooded Orioles in some fig trees along the White's Bridge road, about seven miles west of Fresno. I watched them for ten minutes or more, being within fifteen feet of them. This is the only known instance of a female being seen here. At least one, and probably several, males of this species were present during the summer of 1911. On June 4 of that year a male was seen on a vine in the yard of a residence in town and the song was frequently heard, usually in tall eucalyptus trees in various parts of the city. It was last heard about July 1. I feel quite positive that no *nelsoni* were present during the three intervening summers.

Carpodacus purpureus californicus Baird. California Purple Finch. In the *Auk*, vol. xxiii, page 415, Mr. Milton S. Ray recorded this bird from Firebaugh. In response to my inquiry Mr. Ray wrote me that but a single bird was noted, a male that was singing from the top of one of the clumps of trees along the river near town.

Melospiza melodia fisherella Oberholser. Modoc Song Sparrow. I collected a specimen of this form near Oxalis, in the northwestern corner of the county, on January 25, 1916. The bird was discovered in a patch of tules in a small slough, and specimens of *M. m. heermanni* were taken at the same time and place.

Oreospiza chlorura (Audubon). Green-tailed Towhee. Mr. H. C. Ohl has a specimen of this species which he found dead among some straw and refuse from a barn at Mendota, September 10, 1912. The sex was not determined, as decomposition was beginning at the time the bird was discovered.

Vireosylva gilva swainsoni (Baird). Western Warbling Vireo. May 23, 1915, while exploring some of the small ponds north of Riverdale, Mr. J. E. Law saw a single vireo of this species. The bird sang repeatedly at close range. I was investigating another small willow-bordered pond a short distance away and also saw one of these birds.

Oreoscoptes montanus (Townsend). Sage Thrasher. February 27, 1912, Mr. H. C. Ohl noticed an unfamiliar bird perched on a fence near Mendota. It proved to be a female Sage Thrasher and the only one I have ever heard of in the Fresno district.

Catherpes mexicanus punctulatus Ridgway. Dotted Canyon Wren. During the fall months an occasional example of this wren appears in the valley. At such times they usually frequent open sheds and other farm buildings. September 15, 1914, one was seen near Fresno. It was apparently devoid of fear and seemed much at home in a large, open packing shed where it crawled over the cornices and along the rafters in a most satisfied manner, frequently giving its harsh but subdued scolding note. On one occasion a series of Wren-tit-like notes was heard. The bird was still present on November 6, following.

Fresno, California, February 22, 1916.

SOME BIRD NOTES FROM HUMBOLDT BAY

By JOSEPH MAILLIARD

IT WAS the writer's good fortune recently to pass a few days—May 28 to June 4 (1916), inclusive—in the city of Eureka, Humboldt County, California, and to be warmly received and most unselfishly assisted by Mr. C. I. Clay, a Cooper Club member from whom most of us have heard from time to time. In his company the hours not occupied in putting up specimens were spent in scouring the country for certain forms it was especially desirous of finding upon their native heath, sequoia, salicornia, or whatever they elect to inhabit. Without treading upon the preserves of the local ornithologists, who probably have a surprise or two up their sleeves, there are a few matters that might be touched upon which may be of value to some of the work being carried on in the state, or at the very least, of interest to some of the ornithologists following out special lines.

The Coast Jay (*Cyanocitta s. carbonacea*) of the Humboldt Bay region appears to be, as a rule, somewhat lighter colored than specimens from Marin County. While the Eureka bird inclines mostly toward *carbonacea*, individuals vary considerably, and some of the lighter ones, taken in the first week in June, differ from June birds taken near the mouth of the Russian River, Sonoma County, only in that they are rather darker on the head and back, while the lighter blues with a certain greenish tinge are very close to the tints of the same feathers in specimens of unquestionable *frontalis*, to which form the Russian River birds are so closely allied. As a whole, however, the Humboldt Bay bird is very similar to that of the coast country of southern Monterey County, such as vicinity of Little Sur River, Lucia, Partington Point, etc., all the specimens from these localities, that are in our collection at least (coll. of J. and J. W. Mailliard), being somewhat lighter than those taken in Marin County, although all classified with *carbonacea*.

The California Jay (*Aphelocoma c. californica*) it seems has never been recorded from the vicinity of Humboldt Bay, although it has been taken at Hoopa Valley to the northeast of Eureka and over a range or so of mountains (W. K. Fisher, CONDOR, VI, 1904, p. 51). This species is reported by C. I. Clay as breeding at Alton, 21 miles south of Eureka, at an elevation of only a few feet above the sea, and except for being a little more open, in similar type of country to that actually bordering Humboldt Bay. In the mounted collection of birds belonging to Dr. B. M. Marshall, of Eureka, are some specimens of the California Jay labelled Eureka, put up by Mr. F. J. Smith, of that place, and taken by either one or the other of these two Cooper Club members. While none of this species was noted by the writer in the actual vicinity of Humboldt Bay, a couple were seen and one taken back of Arcata at an altitude of about 1800 feet, where poison oak and the buckeye were in evidence.

The Northwestern Red-winged Blackbird (*Agelaius ph. caurinus*) seems to have been recorded from California in only two instances, up to the time that Grinnell's *Distributional List* was published, yet this is apparently the form breeding in the vicinity of Humboldt Bay. But few of these birds were observed, and breeding colonies were scarce. Around San Francisco Bay, and in the interior, redwings in the breeding season may be seen in almost any favorable locality, such as marshes and swamps, along sloughs where tules grow, and even along the roads among grain fields. But in the Humboldt Bay region many seemingly most suitable spots were reconnoitred without success, and where finally found nesting it was in colonies containing but few individuals. Some twenty specimens were taken, and, while the plumage at this late date (June 1) was not in a very satisfactory condition for determination of sub-species, there seems to be no doubt as to this form being *caurinus*.

Bryant's Marsh Sparrow (*Passerculus s. bryanti*) is common on the marshes around Humboldt Bay, its breeding habitat being supposedly confined to tidal marshes. Yet a male of this form was taken on May 28 on Kneeland prairie on top of a range at an elevation of about 2800 feet and 18 miles from salt water. It appeared to be nesting, but neither nest nor mate was secured. This individual is indistinguishable from specimens taken at same date on salt marsh near Eureka except that the bill is more slender than any other obtained.

The Mendocino Song Sparrow (*Melospiza m. cleonensis*) is given in Grinnell's *Distributional List* as a resident of *fresh* water marshes near the sea, but

this bird was numerous, specimens being taken, along the bay and on salt water marshes in and around Eureka, though it is fair to state that there was probably fresh water not far away in each instance.

The Varied Thrush (*Ixoreus n. naevius*) has been recorded in the *Distributional List* as summering only in the Canadian zone, which makes it appear as if there were no published record of this species breeding at sea level in California. Yet in our oological collection are three sets of eggs taken at or near Eureka by F. J. Smith at elevations of but a few feet above the sea. Mr. Smith writes that he has found this bird nesting from near the salt marshes, where the woods come down to sea level, up to as high as 1500 feet in the ranges farther back. Localities were visited on this occasion where Mr. Clay had found it in the nesting time, in other years, but it was conspicuous this particular season only by its entire absence from the scene. Even in the more Canadian zone, on the ranges back of Humboldt Bay, none was seen or heard.

The Western Evening Grosbeak (*Hesperiphona v. montana*) was found near Eureka on June 1, three individuals being seen and one taken, as they were feeding in the top of a spruce. Clay found this species in this locality on May 7, 1911 (CONDOR, XIV, 1912, p. 74), a flock of about twenty birds having been seen and two secured. While not recorded as breeding near the coast, or at sea level, the fact of its having been noted there from time to time during the nesting season indicates a strong possibility of its doing so.

San Francisco, July 25, 1916.

NOTES ON THE GOLDEN EAGLE IN ARIZONA

By F. C. WILLARD

RECENTLY I have been told a number of experiences that have been had by several old time residents of this country with Golden Eagles (*Aquila chrysaetos*). Mr. John Hand reports the killing of a four-point white-tail deer during a very heavy fall of snow in January of this year. This took place near the summit of the Chiricahua Mountains. The deer had been pounced upon by one or more eagles as it floundered in the deep snow, and its back was fearfully lacerated by the talons. After it had succumbed, the carcass was dragged down-hill over one hundred yards until it lodged against a large boulder. Three eagles were feeding on it when first discovered by some prospectors. A day or two later Mr. Hand approached closely and fired a charge of fine shot at one of the birds but failed to disable it. At this time the carcass had begun to show taint. Traps were set and one eagle, well aged as its color showed, was caught. Small pellets of shot embedded in it showed it was the one Mr. Hand had shot at. The other two eagles were keen enough to keep out of the traps and too shy to be approached within gunshot.

In 1889, Mr. Hand came upon an eagle feeding on a calf it was supposed to have killed. He ran after it as it attempted to fly off and knocked it down with the barrel of his gun. It had gorged so heavily it could not rise over three feet from the ground, there being no wind to assist its taking flight. This was apparently a young bird and was sent alive to Tucson and later to Los Angeles, where it is now supposed to be in one of the parks. The meat of the calf was well on the road to decay.

Mr. Wm. Lutley had a somewhat similar experience. The eagle rose from the carcass it was feeding upon, flapping laboriously to get under way. Mr. Lutley galloped his horse up close to it and shot at it with his six-shooter, a .45 Colt, when it plunged to the ground and turned on its back to defend itself. He captured it with difficulty, and tied it on behind his saddle. Glancing around later, as he rode toward home, he found the skirt of the saddle was swarming with lice. He immediately dispatched the bird and threw it onto the ground. He cut off the wings, head and feet, and also examined the body to see where he had hit it when he shot. To his surprise he could find no sign of a wound. He believes it was frightened by being overtaken by his horse and the noise of his shot, and purposely dropped to the ground to get into its customary position of defence. On this occasion, also, there was no wind to assist the bird in taking flight.

Recently two cowboys in the employ of Mr. Lutley came upon three eagles feeding upon the body of a calf about seven months old. The birds were very sluggish and allowed the cowboys to approach close enough to kill one with a six-shooter. The other two flew away and at last report had not been seen again in that vicinity which was twelve miles or more from the nearest available nesting site. This carcass, too, had begun to decay. Traps were set, but were not sprung at any time. Coyotes had made tracks all around, but the sight and smell of the traps kept these wary animals away. The back of this calf gave every evidence that it had been killed by the eagles. Evidently Golden Eagles do some damage to live stock. Also the above incidents show that the Golden Eagle will, on occasion, eat carrion.

It isn't out of the way to mention here that a Bald Eagle (*Haliaeetus leucocephalus*) was seen on numerous occasions perched upon or flying among the topmost pinnacles of the Chiricahua Mountains during the open season for deer last fall. It was very shy and would not permit any close approach. It was supposed to have fed upon wounded deer, or offal from such as were killed by hunters.

Tombstone, Arizona, April 5, 1916.

FROM FIELD AND STUDY

Black-headed Grosbeaks Eating Butter.—At Idyllwild, in the San Jacinto Mountains, August 2, 1907, I was told by Mrs. Atwood of Riverside that the Grosbeaks came to her tent for butter, hunting for it so persistently that she put it in a covered hanging box, after which they flew against the box again and again. She said that the birds also ate bacon drippings when these were to be had.—FLORENCE MERRIAM BAILEY, *Washington, D. C.*

A Nestfull.—On April 17, 1916, I found a nest of the Spurred Towhee (*Pipilo m. megalonyx*) in a dense blackberry thicket in the Los Angeles River bottom. It was placed in a depression in the ground at the base of the berry bush, made of leaves and grass as is usual, and measured about 2½ inches across on the inside. The contents were nine fresh eggs, quite a nest full, so full in fact that some of the eggs protruded above the edge of the sheltering structure, so that the mother towhee could sit on the nest but not in it. Four of the eggs were laid by the towhee, and five of them, rather the larger half, by a Valley Quail (*Lophortyx c. vallicola*)! When discovered, the towhee was assiduously trying to hatch out this large and unevenly divided family. I have not found such an occurrence cited in any books of bird lore. When I discovered the

towhee's nest I was at first under the impression that a cowbird had been up to her usual pranks.—EMERSON ATKINS, *Los Angeles, California*.

Sierra Junco in Golden Gate Park.—On June 5, 1915, I saw a pair of juncos in Golden Gate Park, San Francisco, and am quite sure they were *Junco oreganus thurberi*. The occurrence of this species in the bay region in summer seems to me worthy of note.—W. A. SQUIRES, *San Francisco, California*.

Pomarine Jaeger in San Francisco Bay.—On May 15, 1916, at about 4:30 P. M., while crossing the Bay from San Francisco to Sausalito, my attention was drawn to a bird whose actions closely resembled those of *Stercorarius pomarinus* but, unfortunately, the individual was too far distant to warrant a record. The return trip of the following morning proved more successful, however, four birds of this species being seen at such close range as to make identification positive. One passed very close to the ferry boat about west of, and near to, Alcatraz Island; the other three were noted just after passing the island. At the time of these occurrences (about 8:30 A. M.) a heavy west wind and a strong flood tide, both of unusual intensity, were in evidence, the consequent tide-rips in the neighborhood of Alcatraz being extreme.

In Grinnell's *Distributional List of the Birds of California* this species is referred to as follows: "Common fall migrant coastwise. Recorded from San Francisco . . . San Francisco Bay . . . and from off Monterey." Thus it would appear that this is the first authentic spring record for the Bay waters.

For many years I have regularly travelled between San Francisco and Sausalito during the spring, but in spite of constant vigilance my records of this species have heretofore been confined to the months of September and October, when their appearance in small and varying numbers can be safely depended upon, though not necessarily daily.—JOHN W. MAILLIARD, *San Francisco, California*.

Hummingbird Mistakes Scarlet Yarn for a Flower.—On a recent trip to a favorite canyon in quest of hummingbirds, I discovered that someone had been picnicing there and had tied bits of scarlet yarn as danger signals on the poison oak bushes in the vicinity. I noted a female hummingbird, apparently the Black-chinned, repeatedly trying to extract honey from these bits of yarn. This was new to me, and at first I thought she might be hunting for building material. On close observation, however, I concluded that the bright color fooled the bird, and that she expected to find some new kind of nectar.—W. LEE CHAMBERS, *Eagle Rock, California*.

The Vernacular Name of *Passer domesticus* in North America.—In the March-April, 1916, issue of THE CONDOR Mr. H. H. Mitchell questions the advisability of using the name English Sparrow for *Passer domesticus*, the House Sparrow of Europe. The statements of Mr. W. B. Barrows have a bearing on this point. In 1889 Mr. Barrows wrote "The name 'English Sparrow' is a misnomer, as the species is not confined to England, but is native to nearly the whole of Europe. The fact that most of the birds brought to America came from England explains the origin of the misleading name by which it is now so widely known that any attempt to change it would be futile" (The English Sparrow in North America, U. S. Dept. Agric., Div. Orn. and Mamm., Bull. 1, 1889, p. 17). On the same page Mr. Barrows states that the first birds were brought from England to Brooklyn in 1850, and on this and succeeding pages he gives records of the principal early importations and transfers of the species from one city to another. Inasmuch as the name English Sparrow was considered too well fixed to change as long ago as 1889, any attempt to correct the error now seems hopeless.—TRACY I. STORER, *Berkeley, California*.

Breeding of the Scott Oriole in Los Angeles County, California.—During the few days spent at Palmdale in the Antelope Valley between April 27 and May 4, 1916, the Scott Oriole (*Icterus parisorum*) was found to be fairly common wherever tree yuccas grew abundantly. Possibly a few of the birds were late migrants, as many apparently unattached males were seen. Two nests were found, however, on one of which work had just started on April 30; the other contained four eggs in which incubation had just commenced on May 4.—ADRIAAN VAN ROSSEM, *Los Angeles, California*.

Notes from the Vicinity of Los Angeles.

Aphriza virgata. Surf-bird. May 1, 1915, I took a bird of this species close to the pier at Hyperion, where it was feeding with a flock of gulls. On my approach the gulls flew, while the Surf-bird practically ignored my presence.

Calamospiza melanocorys. Lark Bunting. One taken October 29, 1914, on Rancho La Brea, not far from the fossil beds. This furnishes an early fall record of a species that is far from common in this part of the state. It was in company with Gambel Sparrows and Linnets.

Stercorarius longicaudus. Long-tailed Jaeger. On January 26, 1916, I took an immature female of this species from the pier at Hyperion. This is apparently the second record for the California coast south of Monterey Bay, and the seventh for the state.

Oidemia americana. American Scoter. A female was taken November 24, 1915, on the sand under the pier at Hyperion. It was caught alive while napping, with head under wing, but was in good condition as to plumage and flesh. This is the most explicit record we have of the species for this part of the coast, but I suspect that if systematic work were done among the sea-ducks, this scoter would be found less rare than it is supposed to be.

Rissa tridactyla pollicaris. Pacific Kittiwake. A dead bird was found on the beach near Hyperion, on March 8, 1916. It had been torn to pieces by buzzards, but one wing and the skull were saved. On the same date I saw three birds that I am certain were Kittiwakes; they kept by themselves, usually over the surf close to the beach, but were too wild to be taken.

Puffinus tenuirostris. Slender-billed Shearwater. Remains of one bird were found on the beach near Hyperion, on December 15, 1915, and the skull saved. Buzzards had destroyed the skin. On December 5, 1915, a picnic party found a dead bird of this species on the beach some miles north of Santa Monica, and brought it, with apologies, to Dr. John Hornung. He has given me permission to record the occurrence here.—L. E. WYMAN, *Museum of History, Science and Art, Los Angeles, California*.

Variation of the Broken-wing Stunt by a Roadrunner.—We have all observed and admired the simulation of a broken wing by birds desiring to decoy us away from their nests or young. This instinct, for such it must be called, seems to crop out in a great many species, and it is always with interest that I observe the details of the performance on the part of a bird not hitherto found displaying it.

It was, therefore, highly interesting to me to be able to watch this performance as demonstrated by a Roadrunner (*Geococcyx californianus*). I had found a nest of this species with the bird on, situated ten feet from the ground in the crotch of a sycamore tree in the Santa Ana River bottom near Colton, California, on May 10, 1916. As I was climbing near the nest the bird hopped to the ground. Immediately it began to squirm, scramble, and drag itself away across an open space and in full view. The bird was simulating a broken leg instead of the conventional broken wing! The bird held its wings closed throughout the demonstration though frequently falling over on its side in its enthusiasm. The whole performance was kept entirely in my view, the bird gradually working away from the tree until it was some 35 feet distant when it immediately ran back to the base of the tree and repeated the whole show. I had been so interested up to now that I had failed to examine the nest which when looked into contained five young probably a week old. When I got to the ground the bird continued its stunt rather more frantically than before and in order to encourage the bird I followed, and was pleased to see it remain highly consistent until I was decoyed to a point well outside the grove. Here the bird suddenly ran away at full speed and in a direction still away from the nest.

Now while this variation of the broken-wing stunt as performed by a running bird as compared with a flying species is perfectly logical, it had never before come to my notice. I have noted many times the decoying instincts as displayed by the Patagonian Rhea (*Rhea darwini*) in Patagonia, but this bird instead of simulating a broken leg simply pretends that it is in a weak and deplorable condition; wobbles and staggers with much art, and decoys dogs, foxes and eagles away with great success. Also the Rhea uses its wings ostensibly to keep its balance. So the details of the Roadrunner's subterfuge are entirely original.—J. R. PEMBERTON, *Colton, California, August 12, 1916*.

The Coming of the Cowbird.—The bird-lovers of California will regret, I am sure, that that shirker among the feathered tribe, the Dwarf Cowbird (*Molothrus ater obscurus*), is fast getting a foot-hold in the southern part of the State. Los Angeles County, where until a year ago these birds were rare, is now harboring many of them.

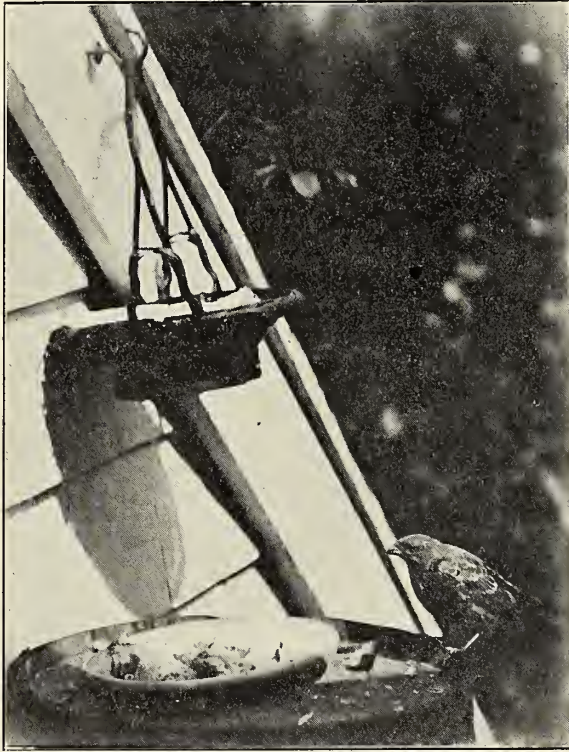


Fig. 52. YOUNG DWARF COWBIRD AT FEEDING STAND; PHOTOGRAPHED JULY 6, 1916, NEAR ARROYO SECO IN LOS ANGELES

The first time I saw one of these birds was on June 22, 1916, when I was giving a bird talk at a picnic in South Park, Los Angeles. As I told about our common birds, many of them hopped about, picking up crumbs near the table much to the delight of my listeners. Presently some one exclaimed: "Look at that small bird feeding that large one"; and, peeking beneath a bench, I was amazed to see a Song Sparrow feeding a young Cowbird twice her size. The two were about all the afternoon, the Cowbird going to the garbage can by himself and trying to feed.

On July 5, of the same year, I was called to a neighbor's to see a small bird that was feeding a young Oriole, for such my informant called it. Mistrusting that it was a Cowbird in my friend's garden, I hastened over to find my surmises were right and that, again, a Song Sparrow had been the victim. The little mother was bringing the big nestling to the baskets where bread was always out for the birds, and was stuffing it down him. I regret that by the time I was able to get a picture the Sparrow had weaned

her charge and I was only able to get a picture of the Cowbird on the feeding table, where it frequently came and seemed quite at ease, as indeed it should have been when the only mother it knew had brought it there (see fig. 52).—HARRIET WILLIAMS MYERS, Los Angeles, California, July, 1916.

Humboldt County Bird Notes.—A female Long-billed Curlew (*Numenius americanus*) was shot near the mouth of Eel River, Humboldt County, California, July 18, 1916, and sent to me for preservation. It was evidently a young bird of the previous year, a straggler in the northwest coast region, where no previous record of it seems to exist.

For several days during the last week in July of this year a flock of Western Evening Grosbeaks (*Hesperiphona vespertina montana*) were welcome visitors at our home in Carlotta. They were a surprise so near the coast, and were evidently attracted by the bountiful supply of berries on the cascara trees (*Rhamnus purshiana*). Eight young and old could be counted at one time, and the clear whistle of others could be heard among the fir trees. In four years residence we had not seen them here before.

The Anna Hummingbird (*Calypte anna*), which has been noted as a rather surprising winter visitor in Humboldt County, appeared in our garden August 6 this year. A handsome adult male at a distance of but a few feet appeared almost gross in size compared with the numerous and smaller *Selasphorus alleni*.

In the May CONDOR of the current year, the present writer mentions the Cassin Kingbird as a possible summer resident of Humboldt County. The recent finding of several pairs of Western Kingbirds nesting along the Van Duzen River indicates that the species occasionally found in this section is *verticalis* and not *vociferans*.—H. E. WILDER, *Carlotta, Humboldt County, California, August 6, 1916.*

A New Breeding Record for California.—May 14, 1916, at Crescent City, Del Norte County, California, was a beautiful, bright, calm day. The panoramic view of that crescent stretch of sand, bordered by the Pacific in one of its calmest moods, with Whaler Island blending into its own shadow but a mile away, made irresistible the desire to seek out some new wonder. A skiff riding at anchor near-by was soon bargained for, and that mile to Whaler Island shortened its distance like magic. A landing was made on the rough rocks at the eastern end, nearest the shore.

A hurried inspection of the surroundings disclosed numerous holes in the ground on the central part of the island and promising crags on the west slope, overlooking the sea. Among the boulders I crawled, peeking in under this one and feeling in under that one. Bending way over, eyes strained, trying to pierce the darkness of a deep crevice, a blue object could barely be seen sticking from under a large wedge-shaped boulder, that barely left room for the hand; it was not the dark tail and white rump of which I was so familiar. A new wonder was disclosed—a beautiful male Fork-tailed Petrel (*Oceanodroma furcata*) which subsequently became skin number 453, with well-incubated egg number 2-16/1—the basis of a new breeding record for the State of California. Not a lone pair of Fork-tailed, but a colony of approximately 100 pairs, was nesting on the west end. The honey-comb-like holes on the grassy flats were homes of the Kaeding Petrels, probably 300 pairs nesting there.

Lo and behold, seventy miles farther south, on Sugar Loaf Rock at Trinidad, a still farther southward breeding record for *furcata*. In company with Mr. W. Leon Dawson on June 18, 1916, I visited the rocks off the Humboldt coast. Mr. Dawson, lucky fellow, pulled, tail first, from a Tufted Puffin's burrow a Fork-tailed Petrel and, I might add, later a fresh egg of the same bird. I discovered a young Fork-tailed Petrel in the downy state the same day, and, several days after, Mr. Dawson took one adult and two young from the same island. The Fork-tailed were nesting in the sandy ground (unusual for this species) among about thirty pairs of the Kaeding Petrel.—C. I. CLAY, *Eureka, California, July 24, 1916.*

Occurrence of the Condor in Humboldt County.—There is no doubt but that the Condor (*Gymnogyps californianus*) once occurred in numbers in Humboldt County, California. There are now two mounted specimens in Eureka. One, in the collection of the Public Library, was mounted by Mr. Charles Fiebig, and was secured from a dead spruce tree on the Devoy place, on Kneeland prairie, eighteen miles from Eureka, altitude 2200 feet, in the fall of 1889 or 1890.

The other bird is in the collection of Dr. Ottemer in Eureka and was mounted by William Rotermund. This specimen was captured near the old Olmstead place on Yager Creek, altitude 1800 feet, about sixty miles east of Eureka, in the fall of 1892. Old settlers claim that the Condor was plentiful in early days in the Humboldt region. In my opinion it is now extinct here.—FRANKLIN J. SMITH, *Eureka, California, July 21, 1916.*

Lark Bunting at Cabezon, California.—In comparing Grinnell's latest list of the Birds of California with some of my old notes I find that no record occurs of the Lark Bunting (*Calamospiza melanocorys*) from the Salton Sea Desert. On May 7, 1883, I shot a male of this species at Cabezon, Riverside County, California. The bird was alone, extremely wild and only obtained after a long chase through the cactus. It was in breeding condition, the testes being enormously developed for a bird of this size and measured $\frac{1}{2}$ by $\frac{1}{4}$ inches. This fact seemed to point to the probability of the bird breeding in the vicinity, as the migrations were long since over.—R. B. HERRON, *San Bernardino, California.*

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EDITORIAL NOTES AND NEWS

Our business managers ask the indulgence of the ornithological public for a slight reduction in size of volume eighteen. The financial depression of the last three years is making inroads on our list of subscribers and members, many telling us frankly that they are having to cut their expenses to actual necessities. For this reason, inasmuch as THE CONDOR has been just about self-supporting the last few years, it seems good business policy to keep within our financial limits, and avoid begging. Time was when THE CONDOR required the help of liberal friends to make ends meet, but now that we have formed the habit of paying our own way we want to continue to do so. Lots of new subscribers and members are coming in, but not quite as many as are having to drop out. Many assure us that with return of normal conditions they will again be on our list, and will want the volumes missed.

It is good news—that of the final ratification of the United States-Canadian treaty, whereby practically all species of birds migratory between the two countries will be protected. This ratification took place on August 29, at the conclusion of negotiations which have been going on for at least two years. Efforts of a large number of earnest conservationists have been concerned in this achievement.

Mrs. Florence Merriam Bailey has spent the past summer in observing water birds on their nesting grounds in the vicinity of Devils Lake, North Dakota. The method of field study applied by Mrs. Bailey gives results of which CONDOR readers are already pleasantly aware. We need merely refer to her vivid narrative from the Texas border, in the present issue.

Mr. Curtis Wright, Jr., has presented his collection of birds' eggs to the California Museum of Vertebrate Zoology. The collection consists of personally taken sets obtained chiefly in the early 90's in the vicinity of Carthage, Missouri, and Taylorsville, Illinois.

The files of data in the United States Biological Survey concerning the migration and distribution of North American birds, and formerly in charge of Wells W. Cooke, have now been placed under the care of Mr. Harry C. Oberholser.

Copies of the portfolio of Fuertes plates from Eaton's "Birds of New York" can be secured for one dollar each from John M. Clarke, Director State Museum, Albany, New York. Our readers will, of course, understand that this announcement is in no sense an advertisement. We believe that it is to their advantage to know of such an opportunity, which we ourselves have just embraced, to our own great satisfaction.

Messrs. Harry S. Swarth, Joseph Dixon and Halstead G. White constitute a field party from the California Museum of Vertebrate Zoology which is studying the natural history of a cross-section of the southern Sierra Nevada in the vicinity of Fresno.

Mr. Stanley G. Jewett, until recently with the Oregon State Fish and Game Commission, is now serving as Predatory Animal Inspector under the U. S. Biological Survey for the territory comprising Oregon and Washington.

The work of the U. S. Biological Survey in studying and mapping the fauna of Arizona is continuing this year, with Mr. E. A. Goldman in charge, and Messrs. H. H. T. Jackson and W. P. Taylor as assistants.

PUBLICATIONS REVIEWED

A STUDY OF THE STRUCTURE OF FEATHERS, WITH REFERENCE TO THEIR TAXONOMIC SIGNIFICANCE. By ASA C. CHANDLER. [University of California Publications in Zoology, vol. 13, no. 11, April 17, 1916, pp. 243-446, pls. 13-37, 7 text figs.]

Except for a few preliminary pages, the work is divided into two portions. Part I, pp. 255-279, is devoted to the "General Morphology" of the feather, a large portion of which has been compiled from the literature, or at least may be found there whether seen by Chandler or not. Though there are some references to the literature, and a bibliography appears at the end of the paper, little discrimination is shown as to what is original and what has been taken from other writers. Furthermore, it is my opinion that not all of the papers which should have been examined were read carefully if seen at all. In certain cases where credit is given, general text or reference books are sometimes quoted instead of the original literature.

On page 248, Chandler announces a new word, "epiphylogy", as a general term for the "study of outgrowths". I cannot see any need for this rather long and awkward word. It and such modifications as "epiphylogic" and "epiphylogical" occur here and there in the paper. In every case where I have made the attempt, the words feather, plumage, or plumage characters can be substituted with no loss in smoothness or explicitness that I can discover.

The following generalization appears on p. 279, in italics: "*The constitutional factor causing the morphologic specialization of feather structures for the production of color is inseparably bound together with the factor for the accompanying pigment, and if the latter is absent, the feather structures present the normal type of the species in which there are no color modifications.*" Barbules from the "violet speculum" of an albino mallard were examined by Chandler and furnished the basis for the conclusion thus reached. My experience has been otherwise in a number of cases. One of these I have found in the neck feathers of white domestic pigeons where pigmented varieties have iridescence. The highly modified form of the barbules in this iridescent region which was described by me in 1903 is also present in white feathers from the same region.

Part II is the taxonomic portion with a

large amount of detailed description of feathers from various birds. There are 25 plates which show many feather structures, mostly barbules from a number of species of birds.

For some fifteen years I have believed that plumage characters might be useful in taxonomy, and I have some unfinished work of my own along this line. As stated by Chandler, there are precedents for attempting to classify various groups of organisms on the basis of one set of characters. In birds, at least, however, it appears to me unsound to attempt a phylogenetic classification of the great divisions, i. e., the orders and families, with only one set of characters such as variations in feather structure and distribution. Instead of using a single set of such very special characters in this detached way, it would be sounder, in my judgment, to compare all known characters, including feather characters when these are adequately understood.

It must be granted that Chandler recognizes the need of using all characters, as is indicated in the last sentence of his paper and elsewhere; nevertheless he has fashioned a phylogenetic system on feather characters only, so far as his comparisons go. This is described as a modification of the system given by Knowlton and Ridgway (1909). I can find no evidence in the paper that any characters except those of the plumage have been used directly by Chandler in elaborating his phylogenetic conclusions.

As a result of his feather studies, Chandler concludes that the ratite birds are "primatively rather than secondarily flightless birds" (p. 388). There is no reference to the contrary evidence furnished by the wing and shoulder-girdle bones, for instance; and I am not convinced by his arguments that the feather structures themselves support his position. The Crypturiformes are placed in association with the Galliformes with excellent arguments from their feather characters. There are also other arguments for this arrangement, and I would use them all.

It has unfortunately been impracticable for me to verify the accuracy of the many figures appearing in the plates. So far as I can tell from memory of these structures, however, they are well done. It is my judgment that the descriptive material in this paper, which represents the author's own studies, is a useful contribution to

knowledge. Furthermore, the taxonomic ideas presented should be considered by workers in bird phylogeny.—R. M. STRONG.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JUNE.—The regular monthly meeting of the Northern Division was held at the Museum of Vertebrate Zoology on June 22, 1916, at 8 P. M., with the following members present: Messrs. Davis, Evermann, Grinnell, Hansen, Lastreto, Martin, Morley, Ohl, Squires, Storer, Swarth, Trenor, Webb, Wright; Mesdames Allen, Ferguson, Grinnell, Klügel, Newhall; and Misses Alexander, Atterbury, Kellogg, Sweezy. As visitors: Mesdames Field, Meade, Morley, Parsons, Swarth; and Misses Ferguson, Harbour, and Dr. Risdon.

The minutes of the May meeting were read and approved, and the minutes of the Southern Division were read. The names proposed at the May meeting of the Northern Division and at the April meeting of the Southern Division were voted upon favorably and the persons were elected to membership. Mrs. Marion Randall Parsons, Mosswood Road, Berkeley, was proposed for membership by Mrs. J. T. Allen.

Mr. Grinnell then gave a most interesting account of his eastern trip, including bird-censuses from the train and in different localities, visits to the important museums, and impressions of the personality and work of leading ornithologists whom he met.

The Club then adjourned for informal discussion and comparison of personal observations.—AMELIA S. ALLEN, *Secretary*.

SOUTHERN DIVISION

JUNE.—Meeting of the Southern Division was held June 29, 1916, at the Museum of History, Science and Art, Los Angeles. In absence of Pres. Miller, Vice-Pres. Law occupied the chair. Members present were: Messrs. Howell, Barker, Brouse, Bryant, Dickey, Daggett, Wood, Rich, Lane, Law, Robertson, Smith, Chambers, Brown, Lamb and Wyman; Mrs. Law and Mrs. Husher. Visitors were Mrs. Wood, Miss Marsh and Dr. Mortimer Jesurun.

Minutes of the previous meeting were read and approved, followed by reading of the minutes of the Northern Division. New names presented, to be voted on at the

July meeting, together with other names already presented in the Northern Division, were as follows: Dr. Casey A. Wood, Chicago Sav. Bk. Bldg., Chicago, by W. M. Pierce; Mrs. R. Bruce Horsfall, 1457 E. 18th St., Portland, Ore., by S. G. Jewett; Ralph T. Kellogg, Silver City, Grant Co., N. M., by W. Lee Chambers; Arthur H. Howell, 2919 S. Dakota Ave., Washington, D. C., by W. Lee Chambers; J. J. Schaefer, R. F. D. No. 1, Port Byron, Ill., by W. Lee Chambers; W. A. Kuykendall, Eugene, Lane Co., Ore., by Alfred C. Shelton; Myron Harmon Swenk, 3028 Starr St., Lincoln, Nebr., by W. Lee Chambers.

There being no other business matters for consideration, the members listened to a most interesting informal talk by Dr. Jesurun, who, in the '70's, spent two years collecting on the headwaters of the Amazon. Mr. H. C. Bryant then spoke on the work of the State Fish and Game Commission, detailing in a gratifying way the attitude of the Commission toward scientific collecting and collectors, and the progress of the educational campaign that he has conducted through the medium of the newspapers. Adjourned.—L. E. WYMAN, *Secretary*.

JULY.—The monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Museum of History, Science and Art, July 27, 1916. Vice-President Law officiated, with Mr. Robertson as acting Secretary. Members present were Messrs. Daggett, Law, Robertson, Little, Brouse, Nokes, Holland, Wyman. Mrs. Robertson was a visitor.

Minutes of the June meeting were read and approved, followed by reading of July minutes of the Northern Division. On motion by Mr. Daggett, seconded by Mr. Nokes, the Secretary was instructed to cast an electing ballot for all names proposed at the last meeting. The name of Dr. Mortimer Jesurun, 430 West Washington St., Los Angeles, was presented by L. E. Wyman for membership.

Mr. Daggett made the interesting announcement that he had recently observed a Scissor-tailed Flycatcher on a busy corner in the residence district of Los Angeles. Business disposed of, the members present enjoyed an hour of general discussion and inspection of the study skins of birds, which are now a regular feature of these meetings, and which on this occasion consisted of Gulls and Jaegers. Adjourned.—L. E. WYMAN, *Secretary*.

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of ten cents per line. For this department, address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California.*

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WANTED—29th and 30th Quarterly Report, Penn'a Board of Agriculture, March, 1886; containing "Birds of Chester County, Penna.", prepared by C. J. Pennock. I will pay any reasonable price.—F. L. BURNS, Berwyn, Pa.

WANTED.—Loomis's "California Water Birds" number V; "The Blue Bird," vol. 6, nos. 1 and 2, published at Cincinnati, Ohio, by Dr. Eugene Swope; Bulletin of the Cooper Ornithological Club, vol. I, any odd nos.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California.*

FOR SALE—Photographs and lantern slides, plain or colored, of birds, nests and eggs, and flowers.—THOMAS H. JACKSON, 304 N. Franklin St., West Chester, Pa.

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W.C.F.

COOPER ORNITHOLOGICAL CLUB

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SOME RESULTS OF A WINTER'S OBSERVATIONS IN ARIZONA

By A. BRAZIER HOWELL

THE SECTION of country contiguous to old Fort Lowell, a few miles east of Tucson, Arizona, is one of peculiar interest to ornithologists, for here much pioneer work was accomplished by certain of the "old guard," such as Major Bendire, and, at a later date, by several of our contemporaries. But little has been done in this region during the winter months, however, and partly for this reason I spent the time from December 7, 1915, until March 25, following, some twelve miles east of Tucson, encamped at an altitude of 2500 feet on Rillito Creek, which flows (occasionally) down an arid valley in a pocket between the Rincon and Santa Catalina mountains. In view of the previous extensive collecting carried on hereabout it is hardly worth while to give an annotated list of the birds encountered by myself, but a few notes concerning certain species may prove of interest.

Due to the situation of our camp, and to the fact that I was unable to absent myself over night, my work was confined to the Lower Sonoran zone. In spite of the fact that I walked as far as seven miles up the canyons from their mouths, at no time was I above the sahuaro association. The height of this zone here, at least 3700 feet, on the sides of the canyons, and higher on the ridges, is caused both by the southern exposure and by the high base level. It was only at the highest point reached that I caught glimpses of such birds as jays and spotted towhees.

Several forms which are not at all uncommon about Tucson seemed to be entirely lacking from our vicinity, notwithstanding the fact that the former place can be only a few feet, possibly seventy-five, lower than the latter, and very similar in character. Yellow-headed Blackbirds (*Xanthocephalus xanthocephalus*) were seen about town, but not where we were. Similarly with White-necked Ravens (*Corvus cryptoleucus*), although I did note several large flocks wheeling in seemingly aimless circles far above camp, for hours at a time, which evolutions I judged to be some form of early courtship. In the nearby mesquite

I saw not a single Abert Towhee (*Pipilo aberti*) nor Crissal Thrasher (*Toxostoma crissale*), although these two were among the commonest species near Tucson. Horned larks can be present during the winter months in only very small numbers, for I saw none, although there are good feeding grounds for them. In some ways the winter was a little disappointing to me, for, with the exception of a few common, local species, the bird population consisted almost entirely of forms that also occur plentifully in southern California during this season. No doubt, the seeming paucity of species was in large part due to the fact that I was able to collect only in the cottonwood, mesquite, and mesa-desert associations.

The nature of the country precluded the possibility of my encountering many water birds; an occasional Farallon Cormorant (*Phalacrocorax a. albociliatus*) in one of the small ponds, a few jack snipe (*Gallinago delicata*), and one or two wandering ducks during the rains, being all one could really expect. I was told that the Scaled Quail (*Callipepla s. squamata*) does occur sparingly in this region, but the only species which I saw was the Gambel Quail (*Lophortyx gambeli*). During the winter, all the quail for miles around seem to congregate on one little range of low hills two or three miles long. Here were two very large covies continually persecuted by gunners, cats, coyotes and horned owls. One of the latter came around when a covey was disturbed one afternoon, apparently seeking a light snack during the excitement. About the middle of February the quail begin invading the bottoms, in pairs and small parties. Later in the season they do considerable damage to grain, small, isolated fields of milo and kaffir sometimes being completely destroyed by them.

Of the four doves of the region, only the Western Mourning (*Zenaidura m. marginella*) and Inca (*Scardafella inca*) are resident in any numbers. Only a very few individuals of the hordes of breeding White-wings (*Melopelia asiatica*) remain for the cold weather, and but a single flock of Mexican Ground Doves (*Chaemepelia p. pallescens*) was encountered. As is well known, the Incas prefer the vicinity of towns, but a flock is sometimes encountered on a ranch feeding with the English Sparrows (*Passer domesticus*). The latter, by the way, are much more widely distributed throughout the settled rural districts than they are in southern California.

During my stay the Sharp-shin (*Accipiter velox*), Cooper (*Accipiter cooperi*), Western Redtail (*Buteo b. calurus*), and Desert Sparrow (*Falco s. phalaena*) hawks were the only common, diurnal raptores. Fifteen miles south of Florence, a pair of adult Harris Hawks (*Parabuteo u. harrisi*) was encountered among the sahuaros, but I saw no other dark-colored hawks on the trip. No Mexican Goshawks (*Asturina plagiata*) were noted near camp, but in the forest of giant mesquites twelve miles southwest of Tucson, F. C. Willard and I saw two or three, March 20. To one who is accustomed only to handling dried skins of this species, the bird on the wing is surprisingly large. Turkey Vultures (*Cathartes a. septentrionalis*) arrived from the south March 12. The Audubon Caracara (*Polyborus cheriway*) has not been reported from the state since 1905, and it was with much satisfaction that I secured a fine male of this species, January 6. I wounded another near the same spot, January 31, but it escaped by running through the brush, a statement that will sound absurd to those who have not had the experience of chasing a caracara for a quarter of a mile.

Western Horned Owls (*Bubo v. pallescens*) are more abundant here than I have ever seen them elsewhere. I am sure that the residents of the region must be augmented during the cold weather by numbers which have come down from

the mountains. L. S. Wylie, on the boundary of whose chicken ranch we camped, and to whom I am greatly indebted for innumerable kindnesses, is much bothered by these owls. He states that one will alight on a branch where a chicken is roosting. The latter will awaken and shriek, but is too scared to move. The owl then sidles along and grabs the fowl by the neck. *Bubo* begins to pair here in January, or possibly earlier, and eggs may be expected during the latter part of February. I shot a male bird from a palo verde on March 10, and then discovered the female on a nest nearby. I returned on the 19th and took the female as she left the nest, but was much surprised when a small male flushed not twenty feet away. She evidently did not mourn her first venture very long.

I had always understood that an owl is in the habit of killing its prey by a single bite through the head or neck, and, indeed, I have had indubitable evidence that such is often the case. However, on the first of the year, I flushed an owl from the ground, and discovered that it had abandoned a freshly-killed cottontail. I skinned the latter and found no marks on it except a few claw punctures, which, however, did not seem to penetrate deeply, and which were confined to the trunk of the animal.

I took seven specimens of screech owls from the sahuaro holes. Three of these H. S. Swarth pronounces *cineraceus*, and four *gilmani*, so it is apparent that the former sometimes descends from the mountains during the cold weather and invades the haunts of the latter. During storms those holes in the sahuaros which face towards the wind are half filled with water. This remains for a considerable time, a state of affairs that aids one in the search for screech owls, for, instead of seeking a dry shelter, the birds prefer to stick to the old home, even though such action necessitates their spending the day in the opening of the hole, in full view of passersby. One Pygmy Owl (*Glaucidium g. ridgwayi*) was taken near a spring in the foothills. My eye was first caught by an Audubon Warbler which was fussing around a larger bird, the owl, as if the latter was one of its own immature offspring. As I approached the Pygmy, it flew to a neighboring cottonwood, still followed by the warbler. Due to one of those blunders which occasionally happens, I snapped my auxiliary at it at forty yards. In its more protracted flight this time, its satellite still held place, only desisting from its solicitous attention when I approached to retrieve the owl.

This locality is a favorite one for collecting eggs of the Elf Owl (*Micropallas whitneyi*), and I learn from those with experience that two or even three sets may be expected from a morning's hard work during the proper time of year. It has been supposed that some individuals, at least, of this species pass the winter in their summer home, but I had already suspected, from work done at Pot Holes, California, during the winter of 1913, that such might not be the case. L. M. Huey was with me during a part of my stay at Tucson, and together we spent many hours in examining the sahuaros with the aid of a light ladder. If the Elf Owl had been present, we would hardly have failed to encounter it, but not one was seen or heard.

I had always supposed that the Road-runner (*Geococcyx californianus*) was a harmless bird, with a strong leaning towards the beneficial, but now I am not so sure of this fact. While I was out collecting, these abundant birds would often be seen skulking about with eyes open for any opportunity, and it was always necessary, in such case, to make a dash for a specimen after it was shot. On two occasions a Road-runner darted in and grabbed a bird when I had almost reached it, once hopping two feet in the air to nip a sparrow that had lodged in

the branches of a bush. At another time I was watching a small flock of sparrows as they busily fed in the brush, when I noted a Road-runner stealing up like a cat, taking advantage of every bit of cover. When at the proper distance, it rushed out and sprang into the air at the retreating sparrows. Its expression of keen disappointment, and the way in which it glanced around, as if fearing ridicule of a possible observer, was one of the most comical things I have ever seen. With this taste for small feathered folk, the species, in this locality at least, may work havoc among the breeding quail, as well as among the inexperienced fledglings of the smaller brush-nesters.

Mearns Gilded Flickers (*Colaptes c. mearnsi*) were widely scattered during the first part of December, but on the fifteenth, a cold snap brought them into the cottonwoods. Here they remained, with a few of their red cousins, until the first part of March, at which time they began to pair, and were soon standing guard over favorite sahuaros. They are commoner here at this season than I have elsewhere seen flickers, though rather wary. The plumage of those taken even during December, was considerably worn. These birds can carry a great deal of shot, and when finally secured, are often so covered with blood that one hesitates to take more than the very smallest number necessary. No sapsuckers at all were seen.

With the exception of a couple of undetermined hummers seen at long range, no members of this family were encountered until the Broad-bills (*Cyanthus latirostris*) began to arrive. This was on March 13, after which two or three were almost always to be seen in a small, sheltered patch of mesquite near the mouth of one of the canyons. They favor the top twig of a tree, and are rather conspicuous anyway, but quite shy. Their long tails are especially noticeable whether they are at rest or on the wing, and while in flight, give them a decidedly "bottom-heavy" appearance. Other summer visitants to arrive before I left were the Arkansas Kingbird (*Tyrannus verticalis*) March 16, Arizona Hooded Oriole (*Icterus c. nelsoni*) and Lucy Warbler (*Vermivora luciae*) March 17, Arizona Least Vireo (*Vireo b. arizonae*) March 13, and Tree Swallow (*Iridoprocne bicolor*) March 23.

This locality is a little high for Vermilion Flycatchers (*Pyrocephalus r. mexicanus*) during the winter, although at Phoenix, they are rather common during this season. I saw but one near camp until the first week in March, when they began to arrive in some numbers, and soon became abundant. Two specimens of what H. S. Swarth pronounces to be typical *Empidonax griseus* were preserved, taken December 30 and February 22, and several more were noted. Meadowlarks were very abundant, all taken proving to be *Sturnella neglecta*.

One small flock of Pale Goldfinches (*Astragalinus t. pallidus*) was noted during February. The Green-backs (*Astragalinus p. hesperophilus*) were rather uncommon also. I watched a pair engaged in nest-building March 17. Near Tucson, Savannah Sparrows were common in the weed fields, but near camp there were very few suitable places for them. The only one collected proved to be *Passerculus s. nevadensis*. Two birds that were present in some numbers were Brewer and Lincoln sparrows (*Spizella breweri* and *Melospiza l. lincolni*). During the first of March they became very common; in fact almost every little clump of weeds seemed to shelter an individual of the latter species. The only junco encountered was *Junco connectens*, which was not particularly common, a fair-sized flock being met once in a week or ten days. No Sage Sparrows were seen, and I am sorry to say, no Rufous-wings (*Aimophila carpalis*). I read

everything I could find concerning this last species before I left home, and made an especial search for it in its favorite haunts. In habits it is supposed to be very similar to the Western Chipping Sparrow, the two species often occurring in the same flock, and it is supposed to be resident wherever found. However, it was in vain that I searched for hours over the identical hills where many nests are said to have been taken in former years. Collectors who have done recent work in this locality, have either never met with the Rufous-winged Sparrow, or have seen only an occasional individual. It seems that the species must have become exceedingly rare here during the past few years, or that those who reported it as common were laboring under a wrong impression.

A large and interesting series of song sparrows was obtained, *montana* outnumbering *fallax* about two to one. On December 22 I flushed four sparrows from some weeds, while hunting for song sparrows, and instantly realized, as they flew to a tree, that they were something good. As they were wild, I could secure but one, which proved to be a Swamp Sparrow (*Melospiza georgiana*). As far as I can learn, this is the first record for the species west of Texas. Swarth (Pac. Coast Avif. no. 10, 1914, p. 60) speaks of the Arizona Cardinal (*Cardinalis c. superbus*) as "probably" resident, and such must surely be the case, for I found it quite common in suitable places, though shy. During the winter it is seldom found on the floor of the valley, but prefers the mouths of the canyons and the widely-scattered ranches below the foothills, where it may be found in pairs or small parties, sometimes in company with Pyrrhuloxias. During March the Cardinals begin to invade the lowlands, and then occur about the ranch corrals. F. C. Willard informs me, however, that they return to the foothills to breed. That most interesting bird, the Arizona Pyrrhuloxia (*Pyrrhuloxia s. sinuata*) was met in larger numbers than the last, small bands being often encountered both in the bottoms and at the foothill ranches. Sometimes they were quite tame, and at others, exceedingly shy.

On February 9, I was very much surprised to see a Painted Redstart (*Setophaga picta*) at an altitude of 3700 feet in the Catalinas. There is no possibility of mistake, as I am familiar with the bird in life, and it permitted an approach sufficiently close for me to shoot it with the auxiliary. Unfortunately, however, the bird rolled down a high bank and into a swift stream, by which it was carried away before I could get to it. Undoubtedly, this species does not winter on its nesting grounds, even in small numbers, but it is worth noting that it is more hardy than most of the other warblers which we are accustomed to associate almost exclusively with Arizona, as it remains in the mountains in considerable numbers throughout September, when all but a very attenuated rear guard of the others have left for the south.

I feel sure that the prevailing impression is erroneous which regards the Bendire Thrasher (*Toxostoma bendirei*) as a permanent resident of this locality. The section between Tucson and Fort Lowell is a favorite place to collect eggs of the species, but, although I kept careful watch, I saw only one bird (February 1) until March 17, when I secured another, and after which I saw two or three more. F. C. Willard offers evidence corroborative of this view, as he tells me that the species occurs at Tombstone, the elevation of which is about twice that of Tucson, only during the winter. Palmer Thrashers (*Toxostoma c. palmeri*) are most abundant, and breed very early indeed, several nests of young being found the latter part of February. I was considerably surprised at the actions of the hordes of Cactus Wrens (*Heleodytes b. couesi*) during the cold weather. In-

stead of comporting themselves in the usual way, they gathered in flocks of from half a dozen to thirty or more individuals, and took to the high cottonwoods, going over the whole top of a tree after the methodical manner of a flock of nut-hatches or bush-tits, even hanging from the branches upside down when need be.

Although not encountered in any numbers, enough Bridled Tits (*Baeolophus wollweberi*) were seen in the valley bottom to point to the probability that the species occurs regularly in such situations. As there seem to be but few state records for the Gadwall (*Chaulelasmus streperus*), I record a female shot a few miles east of Phoenix, March 27, when there seemed to be more of the same species present among the large flocks of teal and Shovelers.

Ornithologically as well as otherwise, Arizona is a wonderful state, and a great deal remains to be done among the birds within its boundaries. It is almost a pity that its southern border offers so many inducements to the collector during the spring and summer, the consequence being that other parts of the state, and the south as well during the winter, have rather suffered for lack of systematic field work.

Covina, California, August 28, 1916.

MEETING SPRING HALF WAY

By FLORENCE MERRIAM BAILEY

III. (*Concluded from page 190*)

AS WE approached Mexico, not only were hackells more frequently seen, but yuccas became more common, sturdy little drum majors, four to twelve feet high, offering good nesting sites to Orioles and Thrashers. Cactus also increased in amount and variety. The beautiful magenta clusters of the ribbed *Cereus* and a small devil's head, with hooked spines, were among them. The thickets were becoming more dense, a veritable jungle of mesquite, huisache, butterfly tree, cactus, and yucca, suggesting the eleven foot rattlers that had been reported with such an air of verity. When Mr. Bailey was tempted in by some rare specimen, the old Texan cried excitedly, "You better come out of that thicket there's buggers there I tell you!" But a long black snake dispatched by the roadside was the worst 'bugger' encountered. Near a pond a plant resembling sunflower was found together with masses of a white nicotine that fairly smelled of tobacco.

Some of the migrants met with were near their southern breeding limits but the Veery seemed decidedly out of place beside Golden-fronted Woodpeckers and the two Doves, the Ground and the White-winged. In the mesquite thickets two of the common notes heard were those of the Golden-fronted Woodpecker and the Wood Pewee. The soft lulling notes of the Wood Pewee to us northerners brought up pictures of cool, high, heavily-roofed northern woods that contrasted strangely enough with these low, hot, thin-leaved mesquite, cactus, and thorn thickets, drolly spoken of as timber; but though the Pewee, which winters from Nicaragua to Colombia and Peru, breeds as far north as southern Canada, some of its numbers do breed as far south as southern Texas.

At our first lunch camp beyond Sauz Ranch a thunderstorm overtook us just as the Texan had lit the fire. He had gathered his firewood painfully, complaining, "There's plenty of that little bresh, but its mighty thorny I can tell you!" and loath to have to gather a second batch, when the rain began, slipped the bake oven over his fire. Fifteen or twenty minutes later when about two inches of rain had fallen and his fire was out, the old man, standing in the water remarked, facetiously, "A little more and this would have been a right smart rain".

While waiting for the roads to dry off a little we walked around among the bushes where the Thrashers and other birds were singing and the White-winged Dove was hooting like an Owl. In the cactus we found nests of Curve-billed Thrasher and Cactus Wren, while the Bullock Oriole, Chat, Yellow Warbler, Summer Tanager, Bewick Wren, Roadrunner, Shrike, and the small Texas Woodpecker added interest to the hour.

In going on we realized that we were nearing Mexico, for at a roadside store, where strings of garlic hung on the wall, we got two dollars of Mexican money for one of United States coin.

Thirty-five miles from the Mexican line we forded Rio Coloral, formerly one of the mouths of the Rio Grande. Here we found Spotted Sandpipers, a flock of White-winged Doves, a Fish Hawk catching fish, and a Mockingbird with a nest in a blooming tuni cactus. In this, the land of the Mockingbird, one of the birds would often start a moonlight chorus, birds of other kinds joining in as they awoke, the Cassin Sparrow being among the nocturnal choristers. These nocturnal concerts which have been described by other field workers, were among the most delightful features of our life in the open. In the thickets beyond Rio Coloral we found the Sennett Oriole and the handsome Green Jay, a Mexican bird just ranging up into southern Texas. Fresh deer tracks were also seen.

Twenty-three miles from Mexico we camped for a night near a Mexican hackell where we got *centimo leche*, saw women carrying big milk cans on their shoulders and Señors in pointed hats and Señoritas in black rebozas. In sight of camp Jack rabbits nibbled grass and ambled about trustingly. A Caracara flew by, at which, to our amusement, a Scissor-tailed Flycatcher dashed after him and pouncing down, rode on his back till they were out of sight. Texas Woodpeckers and Orioles were in evidence, and Cowbirds fed around the mules. But our camp was named Parauque Camp for the Parauque, a new bird to me, a Mexican bull bat that comes up into southern Texas and whose hoarse *pa-rau'-que* called us hurriedly from our camp fire. Out in the mesquites it would fly from one bare spot to another catching insects like a Poor-will.

The next day there was one long stretch of white daisies framed by mesquite, daisies smaller and with finer petals than the eastern flower but effective in the mass when turned toward the sun. In the main it was a day of blooming cactus, splendid masses of it in fuller bloom than we had found it before; a day that gave new meaning to the word cactus to me. Never again would it stand for spine-covered grotesque forms of vegetation. Does the desert bloom like a rose? No, it blooms like a cactus! Nature strews your path with thorns, it is true, but only to ensure the flowers, big generous blooms of gorgeous hues, bright lemon, soft saffron, dull orange, magenta, and glowing crimson. Seven species there were along our way. Lowly ground clusters

made glad the waste places, fairly excited us by their triumphant notes of color; low cactus trees held the eye as landscape centers, and great walls, twice our height, yellow with bloom, fairly radiated sunlight. Cactus Camp we dubbed our night's camp for it was beside an eight to ten acre patch of solid yellow flowered prickly pear.

In one cactus bush, oddly enough, a wood rat was sitting in an old Thrasher's nest that he had fixed over for himself. Another wood rat had decorated its house with one of Mr. Bailey's small traps, a rare specimen for its museum! On one side of camp was a small slough that would have been tempting for a swim had it not been for the alligator slides on its banks. The soft mud of the roads here was marked up with tracks of turtle, deer, and armadillo, and the ground in many places covered with miniature toads.

From the cactus strip we drove down through coast marshes, really river flats extending along both sides of the Rio Grande, where numerous small *Ammodramuses* kept flying up from the marsh grass, buzzing low over the tufts to drop down again out of sight.

After our long journey through country whose occasional houses were Mexican hackells, when approaching Brownsville we looked twice at an unfamiliar appearing building and then exclaimed, "Why, that house has boards on it!" so quickly had our eyes accepted Mexican standards. Fresh from the prairie with eyes trained to enjoy soft colors we came to a Mexican house whose dull pink wall harmonized well with its grape vine trellis, and the adjoining pink-walled chapel with its cross standing on the ground beside it. As we drove by a pretty little *Señorita* ran out and pointing to the road with a volley of Spanish held up three fingers. When we failed to comprehend, she grew embarrassed and ran back to the house full of shy laughter, but a guess that she was sent to collect the toll gate fare finally saved the situation.

As we entered Brownsville, May 1, after a hundred and eighty miles of level prairie, the jocoose old Texan called out, "I can't see the town for these yere plegged houses!" Mexican hackells and palmetto roofed sheds and brush corrals were found in the heart of the town, but a public school building with piazzas running around two stories, told of the white population. A boy with a sling shot shooting Eave Swallows from a large colony nesting about a building had a modern air, and girls in shirt waists on bicycles offset *Señoritas* with blue or black rebozas over their heads. The principal industry of the town was apparently Mexican drawn work, though the manes and tails of the horses had been cut off by the makers of Mexican hair work!

A small pink frame house with pink pillars was pointed out as the birth-place of the Mexican Republic, for here in his early days Porfirio Diaz had lived and planned the Mexican revolution. A larger house next door with white pillars and an air of prosperity was pointed out as the second home of the man with the iron hand.

In Brownsville, be it noted, no English Sparrows were seen. A number of native birds were found, among them the Buzzard, the Mexican Crested Flycatcher, Jackdaws, Martins, Barn and Eave Swallows, Mockingbirds and Titmice.

From Brownsville we ferried across the Rio Grande to Matamoras, the river, which was rising rapidly, swirling around cutting its banks at such a rate that it was plain to see how it had cut its way down from Rio Coloral. On both sides of the river the chief crops were then cotton, corn, and sugar cane, but oranges, lemons, bananas, and guavas were also seen growing. Both

Brownsville and Matamoras were formerly towns of great wealth, Matamoras having been the distributing center during the Mexican war; but externally the flat-roofed, one story adobes with their softly tinted walls and blinds were merely characteristic Mexican dwellings. The iron gratings for doors and windows may have hinted at vaults and safes of days of opulence but they also bespoke the southern climate where doors and windows must needs be open at night. The plaza and market place were characteristic and the picturesque old cathedral whose chimes could not be rung without the payment of a tax had bullet holes left from war times.

With all this foreign setting it was a surprise to find an enthusiastic botanist, a woman connected with the Presbyterian mission, actually teaching botany to the Spanish Señoritas. Would that some one could have taught them the birds!

Leaving Brownsville late in the day we were obliged to camp for the night within too easy reach of the town, for our road was as historic as the towns themselves, and although the tragedies of earlier days were now infrequent, we were warned by an old army officer to camp before dark well away from the road and to have no late camp fires to attract attention. In spite of the keen interest taken in our movements by the Brownsville Mexicans, however, the first night passed without incident; but the second night we camped in the mesquite which offers thin cover and in the middle of the night the camp guardian awoke to find two mounted Mexicans at the foot of his sleeping bag. With the instinct of an old timer who sleeps with his gun in his blankets, he had his finger on the trigger ready to shoot through the blankets when the men looking down on him—asked the road to Brownsville!

Farther on our way from the Mexican boundary we passed a party of sullen, hard faced Mexicans driving a band of suspiciously good looking horses, which reminded us of the locked gates of the cattle ranches. And later when we were crossing King's Ranch we met three horsemen so well mounted and armed that we imagined they might be looking for missing horses. The old Texan, however, said they were Mrs. King's soldiers and that probably "something had happened" down at the other end of the ranch and they were "going to see about it."

In spite of local tragedies we passed safely on our way, our only excitements supplied by the "varmints" of our old camp man. A cup of water poured down what appeared to be a gopher hole in front of the tent one morning brought out a tarantula, an inhabitant of the clay soil where as the Texan complained, "the mud grewed to the tent pins". A second spider when trying to evade pursuit ran down a convenient sleeping bag, hence the name Tarantula Camp! Perognathus Camp commemorated a little pocket mouse who, when a floor without holes was being selected for the sleeping bags, popped out of a closed door in the ground and ran into the tent, and who, in searching for his door in the night tramped on our beds and finally got into a trap. There was also one Rattlesnake Camp, though two earned the name, and the shooting of a third rattler coiled in a trail almost led to serious consequences. The shot roused a band of range cattle, the most dangerous animals one encounters in the west, and with their keen hunting instinct they took after the hunter, who only escaped them by dodging into the chaparral as they came charging furiously along, heads and tails up. A Texas long horn at one ranch that we passed had a spread of horn measuring about five feet, for the old

Spanish stock which has nearly run out has gone to horns, in southern Texas. A ground squirrel was seen on our way north, and in one place a red coyote ran across the road ahead of us turning to look back over his shoulder.

On the way north, among the choice southern birds seen were Black-crested Titmice, the exquisitely tinted pink and gray Pyrrhuloxia, a pair of tiny Verdins about one of their big globular nests, Red-eyed Cowbirds sitting on the roadside fences, a White-tailed Kite on a bush in a salt flat, and a small flock of the Black-bellied Tree Ducks standing high on their long legs on small tufts in a pond surrounded by pink water lilies; while on a cool looking pond over whose shimmering water dragon flies were wavering, the diminutive bluish gray Mexican Grebe, found only between southern Texas and Panama was seen swimming about, appropriately enough, among blue and white water lilies.

A number of nests were found in passing. On May 4, eggs were seen in a White-winged Dove's nest, and young in a Jackdaw's nest; on May 5 a Sennett Oriole's nest with four eggs was found in a yucca, a remarkable basket shaped nest hung by a handle from the bayonets of the yucca. The same day a Mockingbird's nest with four eggs was found in a blooming cactus, a Caracara's nest was discovered in the top of a small round oak with fuzzy-headed nestlings, and in a huisache a family of half grown Cardinals were being fed; and on May 6, a Desert Sparrow's nest was found in a low bush with large feathered young.

While the bulk of migration had passed, on May 6, two Whooping Cranes were seen going through their maneuvers in the sky; on May 8 a Wilson Phalarope, a beauty in full breeding plumage, was watched swimming about on a flood water pond; on May 9, a flock of two or three hundred Dickcissels was seen on the fences; on May 10 a large flock of Mourning Doves were passed on a fence; a Black Tern was seen over a lake, and several species of Sandpipers on a narrow strip of pond; besides a few other northerners seen on different days, among them a few Ducks, Thrushes, and Warblers, notably the Black-throated Green, the Blackburnian, and Redstart on May 11, at Petranilla Creek.

The prairie flowers as we went north also underwent a remarkable change. Although we made the whole trip of about three hundred and sixty miles from Corpus Christi to Brownsville and return in seventeen days, not only had the great waves of migration passed north but in places the prairie carpet had changed completely during the interval. An entire set of social plants had gone out of bloom and been replaced by others. In one section we were nearly a day with a newly laid carpet of yellow tar weed that gave a softly tinted picture, the yellow green floor having a wall of dull green mesquite and a roof of soft blue sky. Between Petranilla Creek and Corpus Christi where, on April 24, the ground had been pink with evening primroses, on May 11 it was covered with white mint as far as the eye could see in all directions. The change was so complete that it was positively startling.

But one gets to expect big things of the prairie—waves of flowers, passing throngs of birds, overhead the starry host of heaven, and round about the encompassing clouds. One moonlight night we camped among huisache trees and slept on a bed of daisies, and after the moon set the sky grew fuller and fuller of stars till one could but marvel at their myriad host. Silent night! What infinite peace Nature offers her children! On one of our days when there

was open prairie from horizon to horizon and the blooming white floor and the uplifted song of the Meadowlark had put us in tune, we had a characteristic prairie cloud effect. We were encircled at first by low white cloud flecks in the blue and then as they grew and grew, by encompassing white clouds that seemed to travel with us, till, after crossing a gulch we came up on the other side, seemingly right up into the clouds when, as forest trees rise in a fog, the white host loomed up, white challenging spirits before our path.

Washington, D. C., April 6, 1916.

NESTING OF THE LECONTE THRASHER

By J. R. PEMBERTON

WITH TWO PHOTOS BY THE AUTHOR

IN THE CONDOR (Vol. VI, 1904, pp. 95-98) M. French Gilman has given us a rarely good and complete account of the nesting habits of the Leconte Thrasher (*Torostoma lecontei*). It was with much pleasure that I was able during the spring of 1916 to observe the many interesting characteristics attrib-



Fig. 53. NEST OF LECONTE THRASHER. HALF OF THE CHOLLA CACTUS HAS BEEN TORN AWAY TO EXPOSE THE STRUCTURE.

uted to this rare bird, and while I have nothing new to record it is hoped that the photographs here presented will help towards an understanding of Mr. Gilman's article. The region in which I found this bird was the same in which Mr. Gilman worked, Cabezon and Whitewater, Riverside County, California. This is in the extreme northwestern end of the Salton Sea desert.

Three nests were examined. The first was found on April 20, 1916, by H.



Fig. 54. NEST AND EGGS OF LECONTE THRASHER. THE FELT-LIKE LINING, AS HERE SHOWN, APPEARS TO BE CHARACTERISTIC OF NESTS OF THIS SPECIES.

W. Carriger, with whom I was working at the time. This nest contained three small young and one addled egg, which latter was taken as being the first ever seen by either of us. This nest was located in the center of a cholla cactus and about two and a half feet above the ground. On May 13, 1916, two nests were found. One was located five feet above the ground in a Spanish bayonet or, as sometimes called, yucca. The second was in the center of a cholla cactus bush,

the one photographed (fig. 53), and may be regarded as being typical of those described by Mr. Gilman. Both nests contained three incubated eggs.

The skeleton or framework of the photographed nest is bulky, strong and well anchored amid the many ramifications of the spiny cactus. The lining is made entirely of a fine, gray, woolly plant which grows in abundance in the locality and is pulled up entire by the bird. This material is firmly pressed together and forms a remarkably felt-like padding about one-half inch in thickness. The light gray color of this lining contrasts well with the brown framework and the light blue of the eggs. (See fig. 54.)

At Cabezon the Pasadena Thrasher (*Torostoma redivivum pasadenense*) occurs also. Nests of this bird were found to differ radically from those of the Leconte Thrasher in not having the felt-like lining.

Colton, California, August 24, 1916.

THE SAN DOMINGO GREBE IN BEXAR COUNTY, TEXAS

By ROY W. QUILLIN and RIDLEY HOLLEMAN

ABOUT TEN miles south of San Antonio, there is a large marshy lake which covers something like a thousand or twelve hundred acres. Being the only body of water of this size in this part of Texas, and having exceptional surroundings, it is the mecca of the water birds of this county. Practically the entire lake is surrounded by a barrier of cat-tail reeds, tules and marsh grass, which in some portions is one hundred or more yards in width.

While searching for nests of the American Eared Grebe in a secluded inlet of this lake we located our first nest with eggs of the San Domingo Grebe (*Colymbus dominicus brachypterus*). Both cat-tails and tules were growing at this point, but not so thickly as they are generally found. In one of the small patches of open water, which break the monotony of these reed jungles, the nest was anchored. In general appearance the nests examined by us average somewhat smaller than nests of the American Eared Grebe, this being especially true of the hollow in which the eggs are deposited. The nests were composed of decayed reeds of every description, heaped into a cone-shaped mass measuring from four to six inches in height, and from fourteen to twenty-four inches in diameter at the base, tapering to six or eight inches at the top, and they were liberally plastered with mud, especially the depression which held the eggs. The area of this depression, the depth of which is about one inch, is determined by the number of eggs in the clutch, as they fit snugly into it.

Of five nests located from June 25 to July 9, two contained four eggs and three, three eggs. All these sets were from slight to heavily incubated. The eggs were badly stained, and the majority retained a rich brown cast even after the most vigorous scrubbing. In all cases the eggs were covered by a thin layer of damp, decayed reeds.

We were unable to flush the bird from any of these nests, and were able to identify them only by patient and lengthy waiting. These Grebes are very hard to see on this lake, as they keep close to the reeds, and if found a short distance from them they immediately slip under the water and disappear. However,

they were seen feeding in the company of American Eared Grebes, Florida Gallinules and American Coots.

While these tiny Grebes are very timid and therefore hard to observe with much satisfaction, they are to us the most interesting of our local water birds, and have afforded us a great deal of pleasure, not to mention the sets which repose in our cabinets.

San Antonio, Texas, October 4, 1916.

MORE SUMMER BIRDS FOR SAN FRANCISCO COUNTY

By MILTON S. RAY

WITH PHOTO BY O. J. HEINEMANN

MY LIST of San Francisco County birds in the CONDOR of March, 1906 (pp. 42-44) was based almost entirely on observations in Golden Gate Park and the Presidio Reservation, these localities having furnished 41 of the 44 listed. Later field work in the Merced Lakes region, in the southeastern corner of the county, has yielded so many species new to the list that I have considered it advisable to publish the present paper. While covering, principally, the notes of Henry W. Carriger, J. Roy Pemberton and the writer, a number of records made by others have also been incorporated. Although the Farallon Islands form a part of our county, it was deemed, on account of their distance from the mainland, inadvisable to include the avifauna of those sea islands in the list. There is little doubt also that considered geographically the islands properly belong to Marin County, being a continuation of the Point Reyes peninsula. Unless otherwise specified all Lake Merced notes refer to the southern lake. "Summer", in the title, is intended to cover the nesting period and hence must necessarily cover a large part of spring as well. Several records, including that of the Nighthawk and of the Hermit Thrush, have been omitted owing to the subspecific rank having not been definitely determined.

45. *Aechmophorus occidentalis*. Western Grebe. While noted by Carriger and myself on Lake Merced at various dates in spring and summer we have no nesting record for this species. A very interesting record is A. M. Ingersoll's, who collected a set of eggs, incubation advanced, on Lake Merced, June 1, 1885.

46. *Colymbus nigricollis californicus*. American Eared Grebe. Noted on various occasions on Lake Merced.

47. *Podilymbus podiceps*. Pied-billed Grebe. A common nester at Lake Merced through a long season. On August 6, 1911, I collected a typical nest, of decayed vegetation, floating just off the tule-fringed lake-shore with six eggs in which incubation was well along. Mr. A. M. Ingersoll also has eggs of this grebe taken at Lake Merced.

48. *Gavia immer*. Common Loon. Noted on Lake Merced July 4, 1911, and other dates.

49. *Lunda cirrhata*. Tufted Puffin. Noted on San Francisco Bay near Sausalito in spring.

50. *Cephus columba*. Pigeon Guillemot. Found nesting on the rocky shores near the Golden Gate by Geo. W. Schussler, June 5, 1912. Eggs, two, fresh. (See CONDOR, XVIII, p. 35.)

51. *Uria troille californica*. California Murre. Noted on San Francisco Bay near the Golden Gate during the spring months.

52. *Larus occidentalis*. Western Gull.

53. *Larus californicus*. California Gull. Great flocks of gulls were common on Lake Merced on every visit. Most of the birds were immatures.

54. *Phalacrocorax auritus albociliatus*. Farallon Cormorant. A colony of 500 nesting on Seal Rocks off the Golden Gate noted by William Leon Dawson, July 21, 1912 (CONDOR, xvii, p. 19). We have seen this bird on Lake Merced during the spring, but never in abundance.

55. *Anas platyrhynchos*. Mallard. We noted young of the year on Lake Merced July 4, 1911, and Carriger also saw parent with small young at Chain of Lakes in Golden Gate Park, May 22, 1910.

56. *Mareca americana*. Baldpate. Recorded at Stow Lake June 5, 1915, by W. A. Squires (CONDOR, xvii, p. 234).

57. *Marila affinis*. Lesser Scaup Duck. Female with three young noted on Stow Lake in early July, 1913, by George W. Schussler (CONDOR, xviii, p. 35).

58. *Oidemia deglandi*. White-winged Scoter. Seen April 23, 1911, and July 4, 1911, on Lake Merced by Carriger and the writer. Like the following, the birds seen were evidently non-breeders.

59. *Oidemia perspicillata*. Surf Scoter. Noted on April 23, 1911, and on other dates. On one occasion Carriger and I captured a crippled bird and it apparently expired in our hands. Laid shortly afterwards in the bow of the boat, we were astonished to see it leap overboard and splashingly paddle away.

60. *Erismatura jamaicensis*. Ruddy Duck. While Carriger and I have found this a common bird on the Merced Lakes a careful search revealed no nests. Pemberton however, located one May 21, 1902, with two eggs, hidden beneath a canopy of tules on the shore of Lake Merced.

61. *Botaurus lentiginosus*. American Bittern. Noted on Lake Merced April 23, 1910, and on various other dates.

62. *Ardea herodias hyperonca*. California Great Blue Heron. Noted at Lake Merced April 23, 1910, July 4, 1911, etc. Carriger also found what he believed to be previously occupied nests of these birds in a grove of tall eucalyptus on the west shore of the lake.

63. *Butorides virescens anthonyi*. Anthony Green Heron. I noted this bird April 23, 1910, at Lake Merced.

64. *Nycticorax nycticorax naevius*. Black-crowned Night Heron. Noted at Lake Merced April 23, 1910, and on other dates.

65. *Rallus virginianus*. Virginia Rail. I noted this bird near the north lake and found an old nest with scattered egg-shells on April 30, 1911.

66. *Porzana carolina*. Sora Rail. Carriger noted a number of these birds on the edge of the tules on the western shore of Lake Merced.

67. *Lobipes lobatus*. Northern Phalarope.

68. *Phalaropus fulicarius*. Red Phalarope.

69. *Catoptrophorus semipalmatus inornatus*. Western Willet.

70. *Actitis macularia*. Spotted Sandpiper. Carriger noted the above four species during the spring at Lake Merced.

71. *Oxyechus vociferus vociferus*. Killdeer. I have noted this species on the Recreation Grounds in Golden Gate Park, and Carriger also records it as being seen in the Park Stadium. Both dates in late spring. Jesse Klapp, the park game warden, informs me that he found two nests of this bird in the Park Buffalo Paddock, one with three young and one two young during the spring of 1916, and that Killdeer also nested there in 1915 though he did not locate the nests.

72. *Accipiter velox*. Sharp-shinned Hawk. I noted this bird in the Sutro Forest, April 30, 1916.

73. *Pandion haliaetus carolinensis*. American Osprey. Carriger noted one of these birds in May flying over the Sutro Forest. The nearest breeding point I know of is near Hilton, Sonoma County, where Chase Littlejohn found it nesting in August, 1916. The nest, about 100 feet up at the top of a giant redwood, was at a bend of the Russian River known as Cape Horn and contained large young. The parents were often noted at the nest or fishing along the river.

74. *Aluco pratincola*. American Barn Owl. Carriger and I found this owl a common nester in the high sandy cliffs in the Merced Lakes region. April 23, 1910, a nest

was noted with large young. On April 15, 1911, one of several nests found, held six eggs slightly incubated. The photograph shows the writer suspended at the nest with Carriger at the top of the cliff.

75. *Speotyto cunicularia hypogaea*. Burrowing Owl. Dudley S. De Groot noted three of these birds on the hillside just south of Visitacion Avenue, February 24, 1915. Each took flight from the ground at the entrance of a burrow. The latter appeared as having been used, as excrement and pellets were in evidence. De Groot also informed me that he noted several other burrows on the hillside but did not return to make any later investigations.

76. *Tyrannus verticalis*. Western Kingbird. Jesse Klapp informs me that he found three nests in Golden Gate Park during June of the present year (1916), one with eggs and two with young.



Fig. 55. SHOWING RAY SUSPENDED AT NEST OF AMERICAN BARN OWL IN SANDY CLIFF FACING LAKE MERCED. CARRIGER AT TOP LOWERING ROPE.

77. *Corvus corax sinuatus*. Western Raven. Pair seen at Lake Merced July 23, 1911, by Carriger. There are unconfirmed records of its having bred there formerly.

78. *Agelaius phoeniceus californicus*. Bi-colored Red-winged Blackbird. Rather common at the Merced Lakes where Carriger found it nesting. On one occasion there I saw an unusual flock consisting of nineteen females and one male. On May 6, 1903, I noted a number of pairs nesting in the tules at Mountain Lake, in the Presidio Reservation.

79. *Loxia curvirostra minor*. American Crossbill. A number collected several years ago by Dudley Brown and John Carroll on 19th Avenue near Golden Gate Park; skins still preserved.

80. *Carpodacus purpureus californicus*. California Purple Finch. Abundant in

western half of the County, and undoubtedly nests there as I have found it breeding in similar localities just south of the line. Through an oversight I omitted this bird from my original list.

81. *Astragalinus lawrencei*. Lawrence Goldfinch. While I have found nests of this species just south of the County line my only record for our County is of a male seen March 19, 1916, near the Sutro Forest.

82. *Spinus pinus pinus*. Pine Siskin. An erratic breeder in various portions of the County. In 1892 a school chum lowered down a set of eggs from a nest, in the "Panhandle" District of Golden Gate Park, which for years I was unable to identify. A few years ago I found a sparsely marked set of Siskin eggs which are in every way identical. On March 16, 1916, south of the Park on a city street I noted a Siskin gathering material for a nest.

83. *Passerculus sandwichensis bryanti*. Bryant Marsh Sparrow. While neither Carriger nor I ever succeeded in finding a nest of this bird north of the County line there is a set of four eggs in the Museum of Vertebrate Zoology (no. 1463) taken by L. P. Bolander in a field near Lake Merced May 8, 1905, which I believe constitutes the only actual record of this bird's nesting in our County.

84. *Spizella passerina arizonae*. Western Chipping Sparrow. While not an uncommon breeder close up to the County line my only record here is April 20, 1908, when I noted a bird at Bosworth and Milton streets, in the Mission District.

85. *Junco oreganus pinosus*. Point Pinos Junco. This rather common resident species is unquestionably to be found nesting, as I have noted it at all seasons. Just across the County line I have collected several sets of eggs, and Pemberton also secured skins which proved typical *pinosus*. In view of this, the occurrence of *thurberi* on June 5, as recorded by W. A. Squires (CONDOR, xviii, p. 202), would be all the more remarkable; but Carriger and I feel we must question that record unless specimens were taken to substantiate it. Jesse Klapp tells me that he found a Junco's nest (no doubt referable to this species, i. e., *pinosus*) with two nearly full grown young in Golden Gate Park during the spring of 1916.

86. *Pipilo crissalis crissalis*. California Brown Towhee. Jesse Klapp found a nest of this bird in Golden Gate Park in the spring of 1916, with four eggs. Neither Carriger nor I have seen it north of the County line. The California Brown Towhee is really such an abundant species in San Mateo County, in exactly similar country, that its rarity here is more remarkable than its abundance would be.

87. *Passerina amoena*. Lazuli Bunting. Pemberton noted a pair carrying nesting material near Ashbury Heights a number of times between June 1 and June 10, 1915, but did not succeed in locating the nest.

88. *Piranga ludoviciana*. Western Tanager. Recorded as being seen in Lafayette Square, May 6, 1908, by Clark C. Van Fleet (CONDOR, x, p. 181).

89. *Progne subis hesperia*. Western Martin. Carriger saw several at Lake Merced, April 28, 1912.

90. *Riparia riparia*. Bank Swallow. A very common nester in the sand banks at Lake Merced. A colony was noted nesting April 23, 1910. The only nest Carriger and I excavated contained a single fresh egg.

91. *Vireo huttoni huttoni*. Hutton Vireo. While rather common and undoubtedly breeding within the County neither Carriger nor I have a definite nesting record. A pair noted in Golden Gate Park, March 5, 1910 (Carriger); noted at Lake Merced April 23, 1910 (Carriger and Ray).

92. *Vermivora celata lutescens*. Lutescent Warbler. Carriger noted two of these birds near the Hayes Street entrance to Golden Gate Park, March 5, 1910. He also noted birds feeding young on Strawberry Hill; the exact date however is unavailable, as his records before 1906 were destroyed in the great fire of that year.

93. *Dendroica auduboni auduboni*. Audubon Warbler. This is a county that provides a proper summer environment for the Pine Siskin, so the Western Robin (recently recorded) may yet be found to have this warbler as a summer companion. The nearest breeding station I believe is Sonoma County (Grinnell, Pac. Coast Avifauna no. 11, p. 148). My latest dates here are March 25, 1906, April 1, 1906, March 31, 1907, March 19, 1911, March 27, 1915, and March 24, 1916.

94. *Geothlypis trichas sinuosa*. San Francisco Yellowthroat. A common breeder in the Lake Merced region. I found three typical nests April 22, 1911; two with four

eggs, advanced incubation, and one with three fresh eggs. All were about two feet up in wire grass and made of coarse flat weed stems and lined with fine light-colored grasses, loosely put together.

The name "Salt Marsh" Yellowthroat given this species appears rather misleading in that one might infer it inhabited the salt marshes exclusively, while on the contrary Carriger and I have found it most abundant along fresh-water lakes and streams and in wet meadow land. In fact we have no spring or summer record of it in the salt marshes of San Mateo County, while we found it a rather common nester in certain localities about fresh water a mile or so west of them. Chase Littlejohn writes: "This yellowthroat is found commonly about the marsh here (Redwood City, San Mateo County) during the fall, and less commonly during the winter. In the spring a few are about but soon disappear. They do not nest on the salt marsh, but at one place where the ground is springy and covered with willows they nest among the weeds and tules that are half fresh and half salt water plants, as very high tides reach quite a distance into the willows where they grow at the very edge of the salt marsh. All other nesting sites that I know of are some distance inland about moist or swampy ground."

Our single exception to this is Carriger's finding a nest of this bird with four eggs in a salt marsh north of San Rafael, April 12, 1914. This, however, was high ground and scarcely subject to overflow. In view of the fact that a bird is seldom given a vernacular term referring to the locality it inhabits unless it be its summer home, Carriger and I suggest that the term "San Francisco", referring to the San Francisco Bay region which it inhabits, be used instead of "Salt Marsh".

95. *Anthus rubescens*. American Pipit. Carriger and I have noted this bird in the late spring.

96. *Mimus polyglottos leucopterus*. Western Mockingbird. A Mockingbird remained in the gardens about San Jose Avenue and 25th Street, in the Mission district, during the late spring in 1906. It was possibly a released cage bird. (See CONDOR, VIII, p. 76.)

97. *Thryomanes bewicki spilurus*. Vigors Wren. Rather common, but nests found have been few. April 15, 1911, at Lake Merced, Carriger located a nest in a hole in a sand bank with five eggs in an advanced stage of incubation. Jesse Klapp also notes finding a nest in Golden Gate Park.

98. *Telmatodytes palustris paludicola*. Tule Wren. Rather common at Merced Lakes. On April 30, 1911, Carriger and I opened two nests, one holding three fresh eggs and the other five eggs with incubation advanced. On July 23 of the same year we noted another nest with three eggs, incubation advanced; also a nest with four eggs in like condition, July 4, 1912.

99. *Pentsthes rufescens barlowi*. Santa Cruz Chickadee. While the Barlow Chickadee is quite a common resident, neither Carriger nor I have located a nest north of the San Mateo County line. Dudley S. De Groot writes of three nests found in Golden Gate Park as follows: "A nest found April 7, 1916, which contained six badly incubated eggs lying in a thick bed of rabbit fur, was located eight feet up in a hole in the side of a log cabin. Another was in a small cavity fifteen feet up in a eucalyptus and contained young almost ready to fly. The third nest was remarkable for its situation, being placed in a pipe leaning against an out-building. The nest was about one and a half feet down the pipe, which was only three inches in diameter, and contained, in very cramped quarters, young birds about half grown." Jesse Klapp also notes it as nesting in the park.

100. *Planesticus migratorius propinquus*. Western Robin. Dudley S. De Groot found a nest of the Robin in Golden Gate Park fifteen feet up in a patch of bushy young bamboos. It was the usual structure of grasses and mud mixed with considerable string. When found, May 21, 1916, it contained two full-fledged young. Jesse Klapp is, however, I am quite sure, entitled to the credit of being the first to find this bird nesting in our County. I noted at least 3000 Robins one spring evening of the present year on the grassy lawns in the Park Buffalo Paddock near the beach.

The following notes refer to birds previously recorded by me in the list published in the CONDOR of March, 1906.

1. *Fulica americana*. American Coot. Carriger and I can record some unusually late nests. July 4, 1911, one egg, pipped; July 23, 1911, four nests, three with seven eggs and one with eight, all apparently fresh and incomplete. These were all at Lake Merced.

10. *Geococcyx californianus*. Roadrunner. A second record for the County, Lake Merced, March 19, 1911 (Carriger and Ray).

11. *Ceryle alcyon*. Belted Kingfisher. We located a freshly-dug nesting burrow March 19, 1911, and an old one, July 4, 1912; both in sandy cliffs at Lake Merced.

12. *Colaptes cafer collaris*. Red-shafted Flicker. De Groot found a nest in a fence-post cavity in Golden Gate Park, May 21, 1916, with five well-incubated eggs.

13. *Calypte anna*. Anna Hummingbird. An early nesting date is that of a set of two fresh eggs noted by De Groot at Lake Merced, February 23, 1915. He notes that this and other early nests were thickly lined with feathers, perhaps for the reason he gives, that plant down and "willow cotton" were not procurable. He states that all late nests had the latter lining.

15. *Selasphorus alleni*. Allen Hummingbird. I have since found this hummer to be a common nester through a long season in our County. Carriger found a very beautiful nest in an acacia tree near North Lake, April 18, 1915. It was exceptionally high walled, very light colored and daintily decorated. Incubation had made a slight start in one of the two eggs it held. In sharp contrast to the actions of *Calypte anna*, this hummingbird usually whizzes off its nest and does not return to debate the question of ownership. This, a very striking difference in temperament, I do not remember having seen noted by other writers.

17. *Empidonax difficilis*. Western Flycatcher. A second breeding record for the County is De Groot's nest found in the Lake Merced region, May 26, 1916. It was placed fifteen feet up in a cypress crotch and held four eggs, dark with incubation.

18. *Otocoris alpestris actia*. California Horned Lark. On April 22, 1911, Carriger collected a set of four well-incubated eggs in a very open situation on the Ingleside Golf Links. The bird flushed at our feet it being almost dusk at the time. De Groot also found a nest of this bird, May 24, 1915, on the top of Twin Peaks about ten feet from the reservoir. The nest, a slight hollow, grass lined, contained three eggs well along in incubation.

19. *Sturnella neglecta*. Western Meadowlark.

23. *Euphagus cyanocephalus*. Brewer Blackbird. Carriger and I have noted both these species breeding in the Lake Merced district.

24. *Carpodacus mexicanus frontalis*. House Finch. I saw a veritable cloud of these birds, at least 5000, settle on the telegraph wires and nearby trees near Lake Merced, April 23, 1911. From the thousands of feathered throats came a great chorus that was indescribably beautiful.

27. *Passer domesticus*. European House Sparrow. I can record two very late nesting dates: August 30, 1914, birds building in the Mission district; October 10, 1914, four fresh eggs noted in a nest above a door step, where I then lived, no. 299 San Jose Avenue.

34. *Petrochelidon lunifrons*. Cliff Swallow. Carriger and I noted an unusual departure in the nesting of this bird, in the sandy cliffs at Lake Merced. The sand was evidently too soft to hold a plastered nest, so the birds were using burrows like the Bank Swallows, with a very small arch of mud plastered over the entrance.

43. *Hylocichla ustulata ustulata*. Russet-backed Thrush. My only nests of this bird were several found years ago. De Groot located one May 21, 1916, in Golden Gate Park, with four fresh eggs. It was situated in a patch of bamboo bushes close to the nest of the Western Robin, previously noted.

San Francisco, California, October 9, 1916.

FROM FIELD AND STUDY

Grammatical Errors in Vernacular Names.—Many times we see earnest recommendations in these columns from ardent ornithologists advocating changes in the vernacular names of birds, the present names of which seem to be misleading or erroneous. Two apparently glaring grammatical errors seem to have escaped notice up to now but here we have them.

Most birds have qualifying names which tend to point out some peculiarity in the

bird which distinguishes it from its relatives in the same genus. Where the character is one of habit or pertains to its notes and song the present participle is the form the adjective takes. Thus we have Laughing Gull, Cackling Goose, Whooping and Whistling Swans, Whooping Crane, Ant-eating Woodpecker, Worm-eating Warbler, Warbling Vireo, and Mourning Warbler. Departures from this practice occur in such names as Melodious Grassquit, Clapper Rail and Trumpeter Swan, but these forms seem permissible.

There are two names, however, which are very much off color, Screech Owl and the Song Sparrow. It seems that, aside from the grammatical error committed, the more prevalent practice should have dictated that these names be Screeching Owl and Singing Sparrow. Screech Owl and Song Sparrow seem good enough names through long usage, but witness how ludicrous the above list of birds would appear were we to change their names to agree with the form expressed in the case of the owl and the sparrow. We would have Laugh Gull, Cackle Goose, Whoop and Whistle Swans, Whoop Crane, Warble Vireo, Mourn Warbler, Melody Grassquit, Clap Rail and Trumpet Swan!

Nouns are used as adjectives, but the meaning is totally different from that in which the present participial form is used. Thus, where we have cow-barn, tire-rack, shot-gun or iron knife the meaning is a barn for a cow, a rack for tires, a gun for shot, and a knife of iron; simply a phrase shortened into two nouns, one of which is used as an adjective. The meaning of Screech Owl and Song Sparrow is obviously an owl which screeches and a sparrow which sings, and not an owl for screeches nor a sparrow for or of song.

So when we get around to doing any changing of names let us set these right before the Gull, Swan and Goose laugh, whoop and cackle at the poor little owl and sparrow!—J. R. PEMBERTON, *Colton, California*.

Are there Two Forms of the Bryant Marsh Sparrow in San Francisco County?—Joseph Mailliard's note on the Bryant Marsh Sparrow in a recent issue of THE CONDOR suggests a solution to what has been a puzzling problem to me for some time. I have found the Bryant Marsh Sparrow breeding on the Islais Marsh, south of the Potrero district. But there are other birds apparently of this species, averaging somewhat lighter, however, found resident in the Presidio, on the Ingleside Golf Links, and high up the slopes of Twin Peaks. I have noted them many times during the breeding season at the two last named stations. Most of the books speak of this sparrow as though it were found nowhere else than on the salicornia marshes near sea level. It is my opinion that there is an upland form of *Passerculus sandwichensis bryanti* which verges toward *P. s. alaudinus*, and that it ranges from Humboldt County south at least to the Transition area of San Francisco County. I may add that I noted this same light-color Bryant Marsh Sparrow last July on the uplands of western Sonoma County some miles from the sea.—W. A. SQUIRES, *San Francisco, California*.

Caspian Tern in the San Joaquin Valley.—At the time of the appearance of the September (1916) number of THE CONDOR, I had what appeared to be in newspaper parlance a "scoop" on the Caspian Tern (*Sterna caspia*) in the way of a late summer, or early fall interior record, and had a short article upon this subject scrolled out, waiting only the disappearance of this species from the scene before finishing it up and sending it in to the Editor. But meanwhile the above-mentioned number of our journal came out containing John G. Tyler's *Supplementary List of Birds of the Fresno District*, in which there are several records of this species.

However, as Grinnell's *Distributional List of the Birds of California* gives this bird as a "Rather rare winter visitant and migrant, both coastwise and in the interior", with a few records following, most of which are winter with only two spring and no fall records, it should be worthy of note that several individuals have been paying a prolonged visit to the Rancho Dos Rios, near the mouth of the Tuolumne River, Stanislaus County, as many as a dozen having been seen at one time and two specimens taken for positive identification.

It happened this summer that some seepage water was left on our ranch in a depressed piece of ground several acres in extent, and the resulting shallow ponds proved very attractive to several species of aquatic birds. Among these the Caspian Tern chose

these ponds for a temporary abiding place from which it sallied forth from time to time to scan the neighboring lagoons for stray fish floating on the surface of their waters, flying up and down each lagoon or lakelet for a few turns, picking up a tidbit here and there and finally returning to its resting place at the shallow ponds.

For several years past large terns have been noticed in the spring, mostly in May, flying north in groups of two or three, some days quite a number passing by, perhaps half a dozen being in sight at once. But no opportunity ever offered for procuring a specimen for positive identification, although there seemed but little doubt as to the species being *Sterna caspia*. It always happened that when my gun was near, the birds were too far away to reach, and when they were near enough the gun was too far away! Returning in the fall the same thing happened. This fall, however, the large terns were first noticed on September 4, when three or four were seen flying up and down a charming little lake upon the shore of which the main house is situated. Retiring shortly from this lake the birds flew over the shallow ponds spoken of above, which they evidently made their headquarters.

For several weeks after this date some of these birds were always in evidence, while their rather harsh cry or else a sort of gentle little short and trilling whistle could be heard not only at any time of daylight but even in the late dusk of the evening. They were very wary and the chances of happening within gunshot greatly against the collector, but two specimens were finally secured, proving their identity beyond a doubt. On October 6 there were still three or four of the birds on the place.—JOSEPH MAILLIARD, *San Francisco, California*.

Nesting Habits of the Virginia Rail in Mariposa County, California.—On June 5, 1916, while mowing grass in a small marsh on our home place, on Smith Creek near Coulterville, Mariposa County, California, my father discovered the nest and eggs of a Virginia Rail (*Rallus virginianus*). The nest was a tower-like structure composed of flat marsh grasses. It measured eight inches in height and the same in diameter. The ten brown-and-lilac-spotted eggs were just beginning to be incubated.

As compared with eggs of other birds nesting in this vicinity they resemble most closely those of the Valley Quail, but are proportionately longer and darker colored. The grass clump in which the nest was situated was not disturbed in mowing, and near by there was a high bank from which the nest could be easily observed. When anyone approached the vicinity of the nest the incubating bird would slip quietly off; but sometimes she could be heard splashing through the water as she ran. Usually she did not go more than six feet from the nest and would then stand quietly in the grass where she would appear like nothing more than a dark shadow. Whenever any one of us would go near the nest, which we did almost every day, the female would utter a low clucking sound.

Nothing was seen of the male until June 18 when, as we approached the nest, an ear-piercing scream came from him as he stood some distance away in the marsh grass. This whistle was answered by a similar but softer note from his mate. The male showed himself only momentarily as he skulked through the grass as if attempting to distract our attention from the nest.

On June 19 there were six coal black young in the nest. They had black-ringed pink bills, and their feet were very large in proportion to their bodies. Now the demeanor of the female changed. She forgot her shyness and walked out in the open within three feet of where we stood. She fluffed up her feathers after the manner of a sitting hen and uttered many clucks and whistles which were answered by the shrill whistle of the male. He was not so brave as she, and did not show himself except at intervals. On this same day several of the young clambered out of the nest into the water. We replaced them and quitted the vicinity so as not to disturb the family. Later in the day we visited the nest again and found the female absent. Soon the male whistled, his mate answered, and she soon appeared from a grass clump, swimming and wading across a bit of open water to the nest.

By the evening of the nineteenth another egg had hatched and on the morning of the twentieth two more. The last egg hatched on the afternoon of the twentieth. On the morning of June 21 the family had departed and we saw no more of them, save for one that showed itself for a moment in the marsh one day late in July.—DONALD D. McLEAN, *Coulterville, California*.

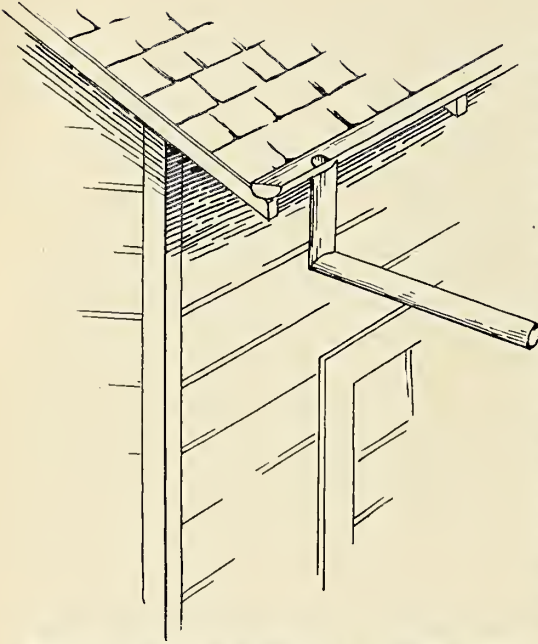


Fig. 56. DRAIN PIPE USED AS A NESTING SITE BY A PAIR OF ASH-THROATED FLYCATCHERS.

Peculiar Nesting Site of Ash-throated Flycatcher.—We had just discovered a *Phainopepla*'s nest in a pepper tree along side of a road in Linda Vista, four miles west of Pasadena, California, when a woman appeared and asked us what we were doing. After explaining, to her satisfaction, that we did not intend to disturb any of the nests in her vicinity she gained sufficient confidence in us to ask the identity of a bird nesting in her yard. Investigation disclosed an Ash-throated Flycatcher (*Myiarchus cinerascens cinerascens*) carrying food in its bill to a peculiarly situated nest. At the northeast corner of the house a four-inch galvanized pipe about three feet long had been soldered to the outlet of the eaves trough in order to prevent rain water from falling against the house. In the elbow of this three-foot length of pipe a pair of Ash-throated Flycatchers had built their nest (see fig. 56).

We were told that in building the nest the birds first entered the open end of the pipe, but later used the entrance through the eave trough, which was little more than two and one-half inches in diameter. At the time of our visit, June 23, 1916, the nest contained young, which, by their calls, must have been partly feathered. Although the Crested Flycatcher of the East (*Myiarchus crinitus*) is known to nest occasionally in an artificial environment this is the first instance that has come to our notice of the Ash-throated Flycatcher, with its notably retiring disposition, taking kindly enough to civilization to nest in a door yard.—HAROLD C. BRYANT and AMY M. BRYANT, *Berkeley, California*.

Bird Notes from Palo Verde, Imperial County, California.—*Querquedula cyanoptera*. Cinnamon Teal. On June 30, 1916, I was out in the flooded country when I found a duck's nest with seven creamy white eggs. No bird was on the nest but there were lots of duck tracks in the mud close by. The nest was under a small bush on the top of a levee about three feet from the water's edge. It was not very well lined but contained some grass and a few feathers. On July 2 I was back, but the young had hatched; on looking around I saw six young, with the mother teal trying to get them away. The old male was on hand and tried to lead me away with the broken-wing game. The young were seen often after that but would always be in the brush.

Porzana carolina. Sora Rail. One pair was seen all summer in a large bunch of tules on the lagoon about half a mile south of Palo Verde; no nest found.

Plegadis guarauna. White-faced Glossy Ibis.

Himantopus mexicanus. Black-necked Stilt. Both these were seen all summer from May 12, till the fall migration, but no nests were found, though some young birds were seen flying around.

Oxyechus vociferus. Killdeer. Several nests were found and lots of young seen in the flooded country during high water.

Metopelia asiatica. White-winged Dove. No nests were found this year, but several seen in 1915. This year the birds were mostly back on the mesa or along the edge of the valley. They may have moved back on account of the flood.

Chaemepelia passerina pallascens. Mexican Ground Dove. Two nests found in 1915. Only one pair of birds seen regularly this summer. Several seen in August and September in the grass flats where the overflow had been.

Parabuteo unicinctus harrisi. Harris Hawk. July 25, 1916, I saw four full-grown young, not able to fly. They were in a cottonwood in a small marsh about two miles south of Palo Verde.

Pyrocephalus rubinus mexicanus. Vermilion Flycatcher. On April 7, 1916, I found a nest north of the store in a screw-bean over-hanging the water. There were two eggs in it about ready to hatch. The young grew up and left the nest. I also found a nest back of the schoolhouse on April 16 with fairly fresh eggs. The birds were ready to fly on May 12. On passing the nest north of the store on June 1 I looked in and was surprised to see three more young birds in the nest, and on looking into the nest back of the schoolhouse found it to contain three eggs. In both cases the nest was twice used in the same season.—LEO WILEY, *Palo Verde, California*.

Another Record of the Wood Ibis in California.—On Sunday morning, August 13, 1916, while returning north on the Santa Fé from San Diego, I was surprised and delighted to see a flock of about twenty Wood Ibises (*Mycteria americana*). I was sitting on the rear platform of the observation car and saw the flock just after our train had crossed the broad delta of a small stream near Oceanside. The birds were flying from the ocean, inland up the rather broad valley of the practically dry stream. Although I had not seen a live Wood Ibis since August, 1888, when I saw seven on the lower Wabash, I at once recognized these birds. Their heavy wing-flaps, their white bodies and black wings could not be mistaken. Messrs. Grinnell and Daggett saw a flock in the same place August 5, 1902 (see CONDOR, v, 1903, p. 18).—BARTON WARREN EVERMANN, *San Francisco, California*.

The Alaska Water-thrush in Marin County, California.—August 13, 1916, I took a trip to Muir Woods in company with several friends. While hiking along what is known as the Bootjack Trail, I suddenly came upon an Alaska Water-thrush (*Seiurus noveboracensis notabilis*) perched on a large boulder near a stream. At this point there was a great deal of underbrush and ferns along the banks, and several small cataracts in the stream. Upon catching sight of me the bird uttered small chirps, and continually teetered and dipped from side to side. I was able to approach within a few feet of it, and noted that the general color was brownish, with black streakings on the breast, and a whitish line through the eye. After a few minutes another one appeared, and the two flew into the underbrush. The white stripe through the eye, and the teetering motion like that of the American Dipper, to my mind makes the identification of this bird unmistakable. As there seem to be only four other records of the occurrence of this species within the State, I thought that my finding it in Marin County might be of some interest.—HAROLD E. HANSEN, *San Francisco, California*.

The Dwarf Screech Owl in the State of Washington.—Unless it be for an occasional "sight record", I believe the Dwarf Screech Owl (*Otus flammeolus idahoensis*) has seldom been recorded in Washington. It gives me great pleasure, therefore, to report the capture of an adult female at Kiona, Benton County, Washington, by Mr. F. R. Decker of that place. An examination showed it to be beyond much doubt a breeding bird. The only possible nesting sites in the vicinity were numerous holes made by Bank Swallows, etc., in a large sandy cliff, so it is possible that this bird may use something besides holes in trees as a place for raising its young. The specimen was taken on May 29, 1916, and is now in the collection of Mr. D. E. Brown, at Seattle, Washington.—J. H. BOWLES, *Tacoma, Washington*.

Cleaning Skulls and Skeletons: a Supplementary Note.—Since the publication of the description of the process of cleaning skulls and disarticulated skeletons two years ago (CONDOR, xvi, 1914, pp. 239-241), different re-agents have been tested to replace in whole or in part the solutions described. These experiments have resulted in one change, only. In place of the Carbolic Acid, substitute Cresylic Acid (Cresol, $C_6H_4CH_3OH$): one part Cresol in place of twenty-five to fifty parts of Carbolic Acid. One-half ounce of Cresylic Acid has been found to be sufficient for a solution containing two quarts of ammonia and six gallons of water. No harmful effects have been caused by the use of a very concentrated solution of Cresol. Cresol costs about thirty-five cents a pound, thus making its use more economical than that of Carbolic Acid.—F. HARVEY HOLDEN, *Museum of Vertebrate Zoology, University of California, Berkeley*.

Some Field Notes from Western Sonoma County, California.—I spent the month of July, 1916, in western Sonoma County, with headquarters at Camp Meeker. Several trips were made into various parts of the county. These trips covered pretty thoroughly the territory from Santa Rosa to Cazadero, thence west to the ocean and south to the Marin County line. The following list does not contain all the birds noted; only those are mentioned whose occurrence in the territory explored seems worthy of note.

Lunda cirrhata. Tufted Puffin. One flew out from under an over-hanging rocky cliff near the mouth of the Russian River, July 17.

Oceanodroma kaedingi. Kaeding Petrel. A bird believed to be of this species, certainly a petrel, was seen to fly out of a cleft in a high rocky cliff about one mile south of the mouth of the Russian River on the same day that the puffin was seen. It is possible that a few of these birds nested there earlier in the season.

Mergus serrator. Red-breasted Merganser. A male and female seen on the Russian River about a mile from the ocean on July 17. This duck is a common winter visitant to these shores, but its occurrence in mid-July seems rather unusual.

Actitis macularia. Spotted Sandpiper. Several seen on the Russian River between Monte Rio and Duncan's Mills, July 10. Two young not yet able to fly, but abundantly able to run, were seen.

Columba fasciata fasciata. Band-tailed Pigeon. Two were seen on Willow Creek, July 17. More were heard hooting in the redwoods along the same stream.

Pandion haliaetus carolinensis. American Osprey. One was seen about a mile from the mouth of the Russian River on July 17. It was catching fish by plunging into the river. Two others were seen a mile above Monte Rio on July 22. One nest was noted on the very tall stump of a broken redwood near Rio Campo. Bird students will doubtless be glad to know that this interesting bird is still breeding on the Russian River.

Agelaius phoeniceus caurinus. Northwestern Red-winged Blackbird. The Red-winged Blackbirds of the lower Russian River seem to me to be of this subspecies rather than *Agelaius phoeniceus californicus*. No specimens were taken, but it is my opinion that an examination of specimens would reveal that what I have suggested is true.

Junco oreganus thurberi. Sierra Junco. Birds of this species were seen feeding young at Camp Meeker on July 2. They have been noted at Cazadero before, but this seems to be the first time they have been found breeding as far south in Sonoma County as Camp Meeker.

Piranga ludoviciana. Western Tanager. An adult male was seen on the Russian River about a mile above Duncan's Mills, July 10.

Hylocichla guttata slevini. Monterey Hermit Thrush. Noted twice at Camp Meeker and heard almost every evening in the redwood cañons back of the camp.—W. A. SQUIRES, *San Francisco, California*.

Notes on the Dark-bodied Shearwater.—*Puffinus grisens* has been observed on San Francisco Bay more frequently during July and August of the present year than it has ever before been my good fortune to record, recent observations having been as follows:

July 20, 4:40 p. m. A small movement was noted westerly from Alcatraz Island, where the birds were working their way oceanwards along the outer edge of an extremely heavy "channel fog".

July 21, 4:35 p. m. A similar movement was observed under like conditions in about the same locality.

July 22, 8:17 a. m. A small group of these birds was seen, again in the same locality, bobbing up and down on the choppy water. As the ferry boat approached, they lumberingly took to wing, passing directly across our bow, some dropping on the water but a few feet away. This afforded such a close view as to confirm the identification.

August 7, 7:15 a. m. A lone individual was seen settled on the water and in the same locality.

The last two records were made on beautifully clear days thus casting doubt upon the theory that San Francisco Bay occurrences are due to misdirected wanderings during exceptionally thick fogs. It now seems more probable that unusually heavy runs of fish bring us these casual visitors.—JOHN W. MAILLIARD, *San Francisco, California*.

Snakes as Nest Robbers.—During the spring and summer of 1916, while collecting near Colton, California, we had the unpleasant experience of returning to many nests, which had a few days before contained incomplete sets or been ready for eggs, only to find them empty. Suspicion was not directed towards the birds themselves because of the great variety of species in which this occurred, nor could it be directed towards jays, for none were present within several miles. Cats, weasels, skunks and foxes were to be eliminated, for in no case was a nest found to be in the least ruffled or disturbed, the eggs having been extracted as deftly as we could have done ourselves, perhaps more so. Lack of any snakes in evidence and the large numbers of nests thus violated prevented a charge being made at the time against them. It almost seemed as if some other collector was dogging our steps and getting our booty.

One day, however, as a nest of a Least Vireo, which was due to have a full set, was approached, a great twittering, crying and chattering from the parent birds was heard. As the nest came into view the cause of the disturbance also appeared. It consisted of a nice slim brown and white snake nicely poised above the nest which was now quite empty. It can not be said with certainty, but it *appeared* that some of the egg was still upon his chin!

On the same day attention was called to a nest of the Black-chinned Sparrow by the cries of the bird, and examination disclosed a thin striped snake with his head actually inside the cup of the nest. The nest was empty and the snake was evidently looking for more.

Another instance which came to our notice, but was not observed by us, showed the collecting proclivities of the snake. In this case a nest of the Pacific Black-headed Grosbeak, which was placed seven feet from the ground in a small sycamore tree, was robbed by a gopher snake. The robbery was witnessed by a boy and reported to us.

The snakes concerned in these three instances were of different species: A Milk or King Snake (*Lampropeltis boylii*) got the vireo eggs; a Garter Snake (*Thamnophis hammondi*) got the sparrow eggs; a Gopher Snake (*Pituophis catenifer*) got the grosbeak eggs

From the large number of robbed nests which came to our notice, it would appear that snakes, probably nearly all varieties present, depend in part during the nesting season on eggs and possibly small young for food. Nearly all the nests so robbed were placed in low bushes and were easily reached by snakes. The fact that a bird will raise a hue and cry as a snake, itself unaware, approaches the nest, probably leads the snake to look for the cause of the anxiety on the part of the bird, and the nest is found. It seems to me improbable that a snake can find a nest without being directed by the bird.

Now while a snake has a perfectly good right to hunt his prey, it seems too bad that they cut into our field. At the same time it does not seem justifiable to kill at sight each and every snake; much better take off the hat to him and then chase him well into the next county where he will do the most good.—J. R. PEMBERTON and H. W. CARRIGER, Colton, California.

Spotted Owl from the San Gabriel Canyon, Los Angeles County, California.—While trout-fishing near Cold Brook Camp in the north fork of the West Fork of the San Gabriel Canyon, Los Angeles County, on May 1, 1916, I took a beautiful adult male Spotted Owl (*Strix occidentalis occidentalis*). The bird was sitting about fifty feet up in a large oak tree in a narrow rather densely shaded canyon, at an elevation of nearly four thousand feet. The summer of 1914 I spent two months at Cold Brook but did not meet with any of these owls, although large owls, perhaps of this species, were reported to me several times.—WRIGHT M. PIERCE, Claremont, California.

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EDITORIAL NOTES AND NEWS

Editorial acknowledgment is hereby made to Mr. J. R. Pemberton for his efficient service in compiling the Index which concludes the current volume of THE CONDOR.

Two Californians went East to attend the American Ornithologists' Union congress held in Philadelphia this year, Mr. Joseph Mailliard and Mr. J. Eugene Law. A wire (November 13) has come from the former, announcing the election to Fellowship, of Mr. Harry S. Swarth. This is a well-deserved recognition of the high grade of Mr. Swarth's systematic work on Western birds. The number of Fellows in the A. O. U. is restricted to fifty. There are now six A. O. U. Fellows residing west of the Mississippi.

The *Ibis* for April contains an article of unusual worth, by C. F. M. Swynnerton, on the coloration of the mouths and eggs of birds. The significance in some cases seems to be clearly that of warning, there

being an accompaniment of bright color or conspicuous pattern with disagreeable taste or odor, such as is proven to discourage attention from potential enemies. Thus the older idea of a directive meaning must in part be supplanted. Here is a line of observation well worth taking up by field ornithologists in America.

Alice Hall Walter, in the school department of September *Bird-Lore*, utters some timely warnings in regard to current methods of popularizing bird study. She has clearly perceived an unfortunate tendency which can only be counteracted by repeated warnings such as she sounds. The trend of her remarks is indicated by the following quotations. "The superficial student, interested only in the popular side of ornithology, is apt to shun the trained ornithologist's method, to balk at his standard of thoroughness. . . . To be unable to concentrate one's attention upon a single problem which may be solved by careful observation" is a serious defect, "resulting inevitably in a lowered standard and a circumscribed acquaintance with bird-life." Whenever this kind of bird-study "tends to a sentimental, inaccurate and uninspired conception of the place of birds in nature and their value to man, it deserves the criticism of having degenerated into a study which cannot hold a secure place . . ." in schools or anywhere else, and is no longer worth encouraging.

The death of Lieutenant-colonel E. Alexander Mearns took place at Washington, D. C., on November 1, in the 61st year of his age. Mearns is known to western ornithologists more especially through his field work along the Mexican boundary. Many valuable articles on southwestern birds have appeared from his pen.

F. E. L. BEAL AND ECONOMIC ORNITHOLOGY IN CALIFORNIA

Our present knowledge of the food habits of California birds is in a large measure due to the painstaking work of Foster Ellenborough Lascelles Beal, Assistant, United States Biological Survey, who for many years devoted considerable attention to the economic relations of the birds of this State. The extent and importance of this work is emphasized anew by the news of Professor Beal's death, which took place at his home in Branchville, Maryland, on October 1, 1916, in his seventy-seventh year. From the fact that he was an honorary member of the Cooper Ornithological Club, and in view of his accomplishments in economic ornithology, it is fitting that a short review of Professor Beal's work in California appear in THE CONDOR at this time.

When the United States Department of Agriculture began investigations into the food habits of California birds, Professor Beal was sent to this State and placed in charge of the work. His studies were planned with a view to obtaining an accurate determination of the economic status of every species of California bird that inhabits orchards, in order that it might be possible for the fruit grower to discriminate between friends and foes, with suggestions as to remedial measures for saving fruit from destructive species. Professor Beal spent within the State the fruit seasons of 1901, 1903 and 1906, in all a period of about nineteen months, collecting stomachs of the various birds and

and conditions in California appear in the introductory paragraphs. In the treatment of each species evidence of two kinds is given, statements of ranchers, and results of stomach examinations. In the conclusions reached, stress is laid upon the nature of the yearly and seasonal food, summaries of which are given for each species. The second part, issued in 1910, treats of thirty-three additional species. Only four California birds are finally blacklisted on economic grounds, these four being the two bluejays, the Linnet and the Red-breasted Sapsucker.

"How birds affect the orchard" (1900) and "The relation of birds to fruit growing in California" (1904) were two Year-book publications also resulting directly from work



Fig. 57. PROFESSOR F. E. L. BEAL ON ONE OF HIS VISITS TO CALIFORNIA. AT LUNCH IN THE SANTA CRUZ MOUNTAINS, SEPTEMBER 4, 1901. PHOTO TAKEN BY W. OTTO EMERSON.

investigating conditions in fruit-growing sections. The larger part of the time was spent at Hayward, Alameda County, in the Pajaro Valley, Santa Cruz County, and at Pasadena, Los Angeles County. The co-operation of scientific collectors was also enlisted, with the result that many additional birds' stomachs were sent to Washington.

As a result of this work, there were published under Professor Beal's authorship, two bulletins entitled "Birds of California in relation to the fruit industry" (U. S. Dept. Agric., Biol. Surv., Bull. 30; *ibid.*, Bull. 34). The first, published in 1902, treats of the Linnet and thirty-seven other species of birds. Some general statements regarding the depredations of birds in fruit orchards,

in this State. Guarded statements like the following are characteristic of Mr. Beal's work: "The value of their [the birds'] work in dollars and cents is difficult of determination, but careful study has brought out much of practical importance in ascertaining approximately to what degree each species is harmful or helpful in its relation to the orchard." The fair treatment he accorded both sides in the controversy regarding the economic value of birds, won support for his standpoint and developed interest in his work.

In succeeding bulletins such as "Food of the woodpeckers of the United States", "Food of our more important flycatchers", and several briefer reports, additional infor-

mation on the food habits of California birds is given.

The economic work of Professor Beal came at a time when any esthetic or economic value that a bird might have was entirely overshadowed by depredations made more obvious by the conditions existing in a new country. His bulletins brought forward such conclusive evidence, however, as to convince most people that while birds sometimes inflict injury upon field crops and orchard trees and their products, they are often of great service in destroying enemies of the same crops, and that the aid so rendered in a subtle way may far more than offset the harm that is so apparent.

Mr. Beal's training was that of a scientist, for he was educated at the Massachusetts Institute of Technology. He was appointed Professor of Engineering at Iowa State College, later on becoming acting professor of zoology and comparative anatomy in the same institution. His interest in natural history finally led him in 1891, to join the staff of the United States Biological Survey. Throughout his connection with the Survey his interest was centered in economic ornithology. Twenty-five years of his life were therefore devoted to this branch of science, and most of the workers in the same field now with the Biological Survey received their training at his hands.

His many economic papers have clearly demonstrated the dollars and cents value of birds, and have greatly helped in building up the present-day sentiment favoring bird protection. The farmer, glad to receive help in distinguishing friend from foe, has been taught to seek conclusive proof of harm done before destroying any of the birds on his farm. To Professor Beal must be given also much of the credit for bringing the science of economic ornithology in America to its present high standard. In California he will be remembered as the pioneer and founder of economic ornithology, and as one who developed interest in, and protection for, insectivorous birds.

Mr. J. S. Hunter, who worked with Mr. Beal in the Pajaro Valley when investigations were being conducted in California, pays this tribute to him: "He was a man who did not seem to grow old, took an interest in everything, was thoroughly energetic and intensely interested in his work." With such characteristics it is little wonder that the name of Foster E. L. Beal is revered wherever known and that his publications are used as models by all younger workers.—H. C. BRYANT.

COMMUNICATIONS

Editor of THE CONDOR:

Will you kindly allow me to make an appeal through your columns to the ornithologists of the Pacific coast for photographs for use in the Life Histories of North American Birds?

I am planning to have this work illustrated with a series of the finest photographs I can obtain, showing the home life of every species possible.

I therefore want photographs illustrating breeding colonies, nesting sites, nests and eggs, and young birds. I am short of material on Tufted Puffin, Rhinoceros and Cassin auklets, Xantus Murrelet and Pigeon Guillemot.

If any of your readers have good photographs illustrating the home life of any of the above, I should be glad to have them send me such as they are willing to contribute from which I can make selections. Each contributor will receive full credit for what photographs as are used.

Very truly yours,

A. C. BENT.

Taunton, Mass., October 10, 1916.

PUBLICATIONS REVIEWED

RECENT ORNITHOLOGY FROM ALASKA AND EASTERN SIBERIA.—As a result of expeditions sent out from the United States into the far northwest, there have recently appeared several papers which add materially to our knowledge of the ornithology of the regions concerned. Three of these papers are to be commented upon here. The first, by Thayer and Bangs¹, deals with the collections of birds obtained by Johan Koren along the Arctic coast of East Siberia, west to the Kolyma River. Koren was sent out at the expense of Mr. John E. Thayer, and during two years, 1911-12, evidently gave a good account of himself.

Thayer and Bangs describe several new birds from the Kolyma country, as follows: *Lagopus lagopus koreni*, a Willow Ptarmigan differing from our North American races in size and shape of bill; *Circus cyaneus cernuus*, a Marsh Hawk smaller and paler than the European Harrier; *Budytes flavus plexus*, a race of the Yellow Wagtail; *Otocorys alpestris euroa*, a race of Horned Lark. The Gray-cheeked Thrush (*Hylocichla aliciae aliciae*) was found to be nesting as far west in eastern Siberia as the

(1) *Notes on the Birds and Mammals of the Arctic Coast of East Siberia*. Birds, by JOHN E. THAYER and OTT RAM BANGS. Mammals, by GLOVER M. ALLEN. Proc. New England Zool. Club, v, April 9, 1914, pp. 1-66, 1 map.

Kolyma River. Incidentally an American race of the Black-bellied Plover is separated from the two forms occupying Europe and East Siberia, respectively, on the ground of small size. It is named *Squatarola squatarola cynosurae*, with type from Baillie Island, Arctic America. The validity of this race has lately been queried by Todd (Annals Carnegie Museum, x, 1916, p. 214). Thayer and Bangs find that, "like the knot, sanderling, turnstone and some other waders", the Dunlin divides into three races. These are: *Pelidna alpina alpina*, of western Europe; *P. a. sakhalina*, of east Siberia; and *P. a. pacifica*, of North America. The latter name, given by Coues years ago, is thus restored to use for our American bird. Koren was able to furnish field notes accompanying his specimens, and these provide basis for valuable facts in regard to migration times and nesting habits.

Another expedition financed by Mr. Thayer visited East Siberia and Arctic Alaska during 1913 and 1914. The two collectors of the party were Joseph Dixon and W. Sprague Brooks. The published report² is under the authorship of the latter, and acknowledgment for help is made to Outram Bangs and H. C. Oberholser. The notable features in this paper are the descriptions of several supposed new forms of American birds. *Larus thayeri* is named from Ellesmere Land. It is evidently a member of the very variable *Larus glaucescens* series. A far-reaching study of the gulls of Arctic America will be required before we can rest assured of the true status of all the variants. A western race of the Harlequin Duck, type from Kamchatka, is named *Histrionicus histrionicus pacificus*. Also the White-winged Scoter of the Pacific is separated from the Atlantic bird under the name *Oidemia deglandi dixonii*, type from Humphrey Point, Arctic Alaska. On geographic grounds this case is not exactly clear, for the species nests in the interior of North America, the Atlantic and Pacific seaboard constituting its wintering grounds.

A new race of Winter Wren is described from the Semidi Islands, Alaska, and is called *Nannus hiemalis semidiensis*. Also the Commander Island Rosy Finch is found separable from the Aleutian race and is called *Leucosticte griseonucha maxima*. Names employed for North American birds, and not used in the 1910 A. O. U. Check-List, are: *Lagopus lagopus albus*, *Squatarola squata-*

rola cynosurae, *Pelidna alpina pacifica*, *Planesticus migratorius caurinus*, and *Loxia curvirostra sitkensis*. Critical comment is often given concerning the status of forms. Then there is considerable amount of biographical material mostly of a very welcome nature. But the temporary loss of one of the field note-books prevented full use of the facts gathered by this expedition.

In the third paper³ F. Seymour Hersey lists with annotations the birds encountered by him during the summer of 1914 in a trip along the coast of Alaska north as far as Point Barrow, with visits to the Siberian coast. This trip was undertaken under the patronage of A. C. Bent and with the chief object in view of securing material pertinent to the latter's work on the Life Histories of North American Birds. It is to be inferred that only a part of the total of information gathered is presented now.

Naturally, with so much territory covered in a single season, no single locality was explored with any degree of thoroughness; also many of the localities were such as had been visited repeatedly before and for which there are in the literature many bird records. We are led in this connection to criticise the paper on the score of the inconsequentiality of many of the remarks concerning the species. Actually new matter is small in proportion to the whole amount of print. In other words, the paper is "padded".

There is, too, an element of vagueness which is decidedly provoking to the student of distribution when searching for definite records of occurrence. The important find of a colony of *Sterna aleutica* was made; but where? Were specimens taken of *Larus vegae*? The references to *Larus occidentalis*, *L. californicus*, and *L. delawarensis* are more or less indicative of their having been found within Alaskan territory, but again there is lacking that clear-cut explicitness that would make these important records of most use to the serious student.—J. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

AUGUST.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, California, August 17, 1916, at 8 p. m. President Storer

(2) *Notes on Birds from East Siberia and Arctic Alaska*. By W. SPRAGUE BROOKS. Bull. Mus. Comp. Zool., LIX, September, 1915, pp. 361-413, 2 figs. in text.

(3) *A List of the Birds Observed in Alaska and Northeastern Siberia during the Summer of 1914*. By F. SEYMOUR HERSEY. Smiths. Misc. Coll., vol. 66, no. 2, 1916, pp. 1-33.

was in the chair with the following members present: Mesdames DeVere, Ferguson, Grinnell, Lombardy, Mead, and Schlisinger; Misses Atsatt, Culver, Wear and Wythe; and Messrs. Bryant, Camp, Carriger, Davis, Grinnell, Hansen, Lastreto, Noack, Squires and Wright. Mr. and Mrs. Stafford, and Miss Jones were among the visitors. In the absence of Mrs. Allen, Mr. Charles L. Camp was appointed secretary pro tem.

Minutes of the June meeting were read and approved and those of the Southern Division for June and July read. Mrs. Marion Randall Parsons was elected to membership. Applications for membership were received as follows: Helen Gilkey, 2215 Ellsworth Street, Berkeley, proposed by A. L. Barrows; Elizabeth H. Price, 23 Panoramic Way, Berkeley, by Mrs. J. T. Allen; and Walter A. Stafford, 31 Park Way, Piedmont, by Susan B. Culver; also the persons proposed at the Southern Division June and July meetings.

Business disposed of, Dr. H. C. Bryant, Game Expert of the California Fish and Game Commission, read a paper on "Attempt at Acclimatization of Foreign Game Birds in California". After spending many years of time and thousands of dollars in money the State of California has nothing but a few colonies of Ring-necked Pheasants to show for all the efforts along this line.

Mr. Storer called attention to the proclamation recently received from the constitutional governor of one of the central states of Mexico in which regulations for the control of fishing and hunting are prescribed. Adjourned.—CHARLES L. CAMP, *Secretary pro tem.*

SOUTHERN DIVISION

AUGUST.—The regular monthly meeting of the Southern Division was held at the Museum of History, Science and Art, August 31, 1916. Vice-President Law presided. Members present were: Messrs. W. C. Bradbury, E. J. Brown, Brouse, Colburn, Chambers, Cookman, Daggett, Holland, Lamb, Law, Nokes, Wyman, and Mrs. Law. Miss Marsh was a visitor.

Minutes of the July meeting were read and approved. On motion of Mr. Daggett, seconded by Mr. Chambers, Dr. Mortimer Jesurun was elected to membership. New names presented were: Ethel Lombardi (Mrs. M. E.), Berkeley, by Amelia S. Allen; H. V. LaJeunesse, Alameda, by H. C. Bryant; Mrs. Chas. A. Field, Berkeley, by Mrs. C. S. Newhall; Benj. J. Davis, Berkeley, by Mrs. Mary Van E. Ferguson; Dr. John Van Deunburgh, San Francisco, by J. Grinnell;

Grace S. Meade (Mrs. Calvert Meade), Oakland, by Mrs. D. W. de Veer; H. Gifford, M. D., Omaha, Nebraska, by W. M. Pierce; Miss Bertha Elizabeth Crawford, Placerville, by W. Lee Chambers.

There being no other business matters for consideration, the meeting resolved itself into the usual informal discussion, and inspection of study skins of gulls. Adjourned.—L. E. WYMAN, *Secretary.*

INTER-MOUNTAIN CHAPTER

MAY.—Meeting was held in the Administration Building, University of Utah, May 10, 1916. President and Vice-President being absent, A. D. Boyle acted as chairman. Meeting called at 8:30 p. m. Members in attendance were: Prof. J. H. Paul, J. Sugden Jr., J. Sugden Sr., Mr. and Mrs. A. O. Treganza, A. D. Boyle and three visitors. Minutes of April meeting read and approved. The evening was spent in general discussion of local breeding grebes, Prof. Paul exhibiting specimens of Western and Pied-billed grebes. Meeting adjourned at 10:15 p. m.—MRS. A. O. TREGANZA, *Secretary.*

JUNE.—Meeting held in the Administration Building, University of Utah, June 14, 1916, at 8:30 p. m. Vice-President Mullen was in the chair. Members in attendance were: A. D. Boyle, J. Sugden Sr. and Jr., Mr. and Mrs. J. A. Mullen, Mr. and Mrs. A. O. Treganza, Prof. J. H. Paul, Miss Ella Jeremy and one visitor. Minutes of May meeting read and approved. A. O. Treganza brought before the club an accusation made by a Dr. Plummer to the State Game Commissioner, Mr. Fred Chambers, that some of the Cooper Club members were collecting eggs not strictly for scientific purposes, but were commercializing in them. Motion was passed that Dr. Plummer be asked to come before the Club and produce his evidence. A general discussion of local breeding terns followed. Meeting adjourned at 10:30 p. m.—MRS. A. O. TREGANZA, *Secretary.*

SEPTEMBER.—Meeting held September 13, 1916, at the residence of A. O. Treganza, 614 East 6th South Streets. Vice-President Mullen conducted the meeting which was called at 8:00 p. m. Members in attendance were: R. H. Palmer, A. D. Boyle, Mr. and Mrs. A. O. Treganza, Mr. and Mrs. J. A. Mullen. Minutes of June meeting read and approved. Mrs. Treganza read from Wells W. Cook's *Bird Migration*, and from Coues' *Birds of the Colorado Valley* on the migration of swallows. Observations were given, followed by a general discussion. Meeting adjourned at 10:00 p. m.—MRS. A. O. TREGANZA, *Secretary.*

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